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Witness(es): Jamie L. Martin



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PACIFIC GAS AND ELECTRIC COMPANY
2017 GENERAL RATE CASE
LATE FILED EXHIBIT ON SAFETY RELATED EXPENDITURES
EXHIBIT (PG&E-44)



PACIFIC GAS AND ELECTRIC COMPANY
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A. Background

During the 2017 General Rate Case (GRC) Settlement Review Workshop on August 30, 2016, Administrative Law Judge (ALJ) Stephen C. Roscow asked: “[H]ow did PG&E spend all of their previous GRC dollars forecasted for safety items?”¹ In response, Pacific Gas and Electric Company (PG&E) explained that, with respect to expense expenditures over the course of the 2014-2016 period of the 2014 GRC, PG&E forecasts to spend almost exactly what was authorized from the 2014 GRC for safety related work categories; PG&E also explained that capital expenditures for safety related work categories are forecast to exceed authorized amounts during the 2014-2016 period.² ALJ Roscow also asked PG&E to provide additional details on its safety related spending. In particular, the ALJ asked that PG&E enter into the record a list of safety related work categories, with their respective authorized amounts and actual expenditures.³

In response to the ALJ’s request, PG&E has prepared this exhibit to summarize its actual and forecasted safety related spending for the 2014-2016 period. This exhibit consolidates safety related cost information primarily from two sources: Budget Compliance Reports⁴ and various data request responses.⁵

¹ Transcript (Tr.) Workshop (WS.), 69:7 to 69:11.

² Tr. WS., 70:16 to 70:27.

³ Tr. WS., 69:1 to 74:20.

⁴ In compliance with the 2011 and 2014 GRC Decisions, PG&E has been providing annual budget compliance reports that include information on authorized, budget and actual spending, as well as explanations for significant variances. PG&E included these reports in the 2017 GRC Application, as workpapers supporting Exhibit (PG&E-1).

⁵ With respect to safety related spending information, PG&E provided such information in the discovery of several proceedings, most notably in the 2017 GRC, the 2014 GRC, and the California Public Utilities Commission’s Safety Culture Order Instituting Investigation.

B. Details on Safety Related Spending During the 2014 GRC Period

Appendix A Tables 1 (Expense) and 2 (Capital) provide cost information at the Major Work Category (MWC) level for line of business (LOB) programs that are fully or partially dedicated to addressing safety and safety related risks. In addition to the LOB safety related MWCs, the tables also provide information at an organizational level for PG&E's Corporate Services departments that are fully or partially dedicated to addressing safety and safety related risks.⁶

For each line item in Appendix A Tables 1 and 2, PG&E provides imputed regulatory adopted amounts for 2014 through 2016, recorded costs for 2014 and 2015, and forecast spending for 2016. PG&E has also included variance explanations for program spending that exceeded \$10 million over or under the total amount adopted for the 3-year period of the 2014 GRC.

With respect to the information provided in Appendix A Tables 1 and 2, note that:

- PG&E has provided the total amount for each of the MWCs and Corporate Services departments that are fully or partially dedicated to addressing safety and safety related risks. In some cases, part of the program spending relates to factors unrelated to safety and safety related risks, such as new business activities or work requested by third parties.
- For the 2014-2016 period, imputed regulatory adopted amounts are calculated at the MWC level for the lines of business and at the department level for Corporate Services departments. This is due to two reasons:
 - PG&E developed its 2014 work plan – as reflected in PG&E's 2014 GRC Application – in early 2012. Due to this timing and the nature of the work, a majority of PG&E's forecast was not based on a detailed list of projects.
 - The 2014 GRC Decision, issued in August of 2014, did not authorize most programs on a project basis.

C. Conclusions of Safety Related Spending During the 2014 GRC Period

In summary, Appendix A Tables 1 and 2 demonstrate that over the 3-year 2014 GRC period, PG&E expects to spend more, in both expense and capital

⁶ PG&E presents Corporate Service costs at the organizational level since Corporate Services departments do not use MWCs.

1 expenditures, than the amounts adopted in the 2014 GRC Decision for safety
2 related categories.

3 Year-over-year spending within the 2014-2016 period started slowly but
4 increased significantly in 2015 and 2016:

- 5 • **PG&E spending in 2014 was less than authorized.** In 2014, PG&E
6 rescheduled or cancelled some projects due to two factors:
 - 7 – PG&E prioritized work based on updated information, such as business
8 needs and risk assessments. Because of this, PG&E performed work
9 that was not included in the 2014 forecast or cancelled/rescheduled
10 work that was originally included in the 2014 forecast.
 - 11 – Some of the forecast work could not be completed in 2014 due to the
12 timing of the final GRC decision (August 2014).
- 13 • **PG&E forecasts that spending in the 2015-2016 period will be more**
14 **than authorized.** PG&E spent higher-than-adopted amounts in 2015 and is
15 forecast to spend higher-than-adopted amounts in 2016. In part, the
16 overspending in capital expenditures is driven by the attrition mechanism
17 adopted in the 2014 GRC Decision, which calculated reductions in capital
18 spending in 2015 and 2016 compared to 2014: \$3.5 billion in 2014, \$3.0
19 billion in 2015 and \$3.1 billion in 2016. PG&E intentionally “levelized” its
20 capital expenditures such that they were lower-than-adopted in 2014 and
21 higher-than-adopted in 2015 and 2016.

PACIFIC GAS AND ELECTRIC COMPANY
APPENDIX A

**TABLE 1: ADOPTED AND ACTUAL/FORECAST
EXPENDITURES FOR SAFETY RELATED EXPENSE MAJOR
WORK CATEGORIES FROM THE 2014 GENERAL RATE CASE**

**TABLE 2: ADOPTED AND ACTUAL/FORECAST
EXPENDITURES FOR SAFETY RELATED CAPITAL MAJOR
WORK CATEGORIES FROM THE 2014 GENERAL RATE CASE**

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THOUSANDS OF NOMINAL DOLLARS
(\$000)

Line	LOB	Expense MWC	Expense MWC Description	Amounts Adopted in the 2014 GRC Decision				Actual/Forecast Expenditures					Notes (for variances exceeding \$10 million over the 2014 through 2016 period)
				Source of 2014 and 2015 Adopted: PG&E's Response to Data Request ED-004 Source of 2016 Adopted: PG&E's Budget Compliance Report (November 2014)				Source of 2014 and 2015 Actuals: PG&E's Response to Data Request ED-004 Source of 2016 Forecast: PG&E's Financial Systems (as of August 31, 2016)					
				2014 Authorized (a)	2015 Authorized (b)	2016 Authorized (c)	Total 2014-2016 Authorized (d = a+b+c)	2014 Actual (e)	2015 Actual (f)	2016 Forecast (g)	Total 2014-2016 Actual/Forecast (h = e+f+g)	Variance from 2014- 2016 Authorized (i = h-d)	
1	Gas	DD	Provide Field Service	98,665	101,753	104,998	305,416	104,564	105,653	110,133	320,350	14,934	Program expenses for 2014-2016 are forecast to exceed adopted amounts due to a higher level of supervision and employee support costs.
2	Gas	DE	Gas Distribution Leak Survey	25,222	25,222	25,222	75,667	25,220	28,270	38,030	91,519	15,852	Program expenses for 2014-2016 are forecast to exceed adopted amounts due to higher costs for leak rechecks (MAT DED) and investigations of leaks not requiring repairs (MAT DEC). In addition, the forecast includes overrun amounts of the Gas Leak Survey and Repair Balancing Account (GLSRBA), related to costs for performing leak surveys (MAT DEA) and rolling out Picarro surveyors (MAT DEF); confirmed overrun amounts to the GLSRBA (exceeding the balancing account cap) will be transferred to MWC JU.
3	Gas	DF	Gas & Electric Transmission & Distribution Locate and Mark	39,264	40,467	41,732	121,464	37,687	39,770	50,849	128,306	6,842	N/A
4	Gas	DG	Gas Distribution Cathodic Protection	12,583	12,937	13,320	38,841	10,495	13,710	25,589	49,794	10,953	Program expenses for 2014-2016 are forecast to exceed adopted amounts due to higher-than-planned costs in 2016 for cathodic protection monitoring, cathodic protection troubleshooting, and isolated steel service evaluations.
5	Gas	EX	Gas Distribution Meter Protection	918	946	975	2,839	2,679	503	1,044	4,226	1,387	N/A
6	Gas	FG	Gas Distribution Operate System	12,985	13,362	13,767	40,114	12,286	14,099	13,444	39,828	(286)	N/A
7	Gas	FH/FI	Gas Distribution Preventive Maintenance and Corrective Maintenance	101,604	102,285	103,016	306,905	91,447	100,212	107,023	298,681	(8,224)	N/A. Note: costs of the Atmospheric Corrosion Meter Inspection work requested in FH are recorded in MWC FI. Overrun costs that exceed the Gas Leak Survey and Repair Balancing Account cap are recorded in MWC JU. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002-Q15.
8	Gas	GF	Gas Distribution Mapping	14,800	15,278	15,775	45,853	6,396	6,566	6,746	19,708	(26,145)	Program expenses for 2014-2016 are forecast to be less than adopted primarily due to the Mapping Records Collection Project being moved from Mapping MWC GF to Gas Technology MWC JV. This project was subsequently renamed the As-Built Records Consolidation Project. The project started in 2015 and has a planned completion date in 2017. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002-Q16. See also PG&E's 2017 GRC testimony, Exhibit (PG&E-3), Chapter 9, page 9-21.
9	Gas	GG	Gas Distribution Planning & Operations Engineer	6,172	6,368	6,573	19,113	8,957	8,645	9,663	27,264	8,152	N/A
10	Gas	HY	Change/Maintain Used Gas Meters	5,713	5,742	5,774	17,229	5,211	3,726	5,459	14,397	(2,832)	N/A
11	Gas	JS/JQ	Gas Distribution Integrity Management (Balancing and Non-Balancing Accounts)	40,560	41,280	42,131	123,970	32,769	25,437	38,750	96,956	(27,014)	Program expenses for 2014-2016 are forecast to be less than adopted because the Distribution Integrity Management Program balancing account was closed in 2014 per D.14-08-032. All related costs have been transitioned to MWC JQ. When compared to the adopted amounts in MWC JS, program expenses in MWC JQ for 2014-2016 are forecast to be less than adopted due to organizational realignment - the Damage Prevention and Quality Management teams and the SAP Work Management Implementation program have been moved outside of the MWC JQ to multiple MWCs.
12	Gas	JU	Gas Distribution Leak Survey & Repair	0	0	0	0	28,409	31,613	30,484	90,506	90,506	Program expenses for 2014-2016 are forecast to exceed adopted amounts. In the 2014 GRC Decision, the Commission established a balancing account for Gas Distribution Leak Survey and Repair and established several restrictions on the balancing account, including an overall limit on the amount of program costs that could be booked to the account. PG&E incurred significant additional costs for this work in 2014-2016, and expenditures above the adopted cap were funded by shareholders. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002-Q17.
13	Electric	BA	Electric Distribution Operation Activities	32,931	33,868	34,863	101,662	34,227	40,203	37,605	112,035	10,373	Program expenses for 2014-2016 are forecast to exceed adopted amounts due to the transfer of power quality engineering costs from MWC FZ to MWC BA; an increase in the costs for SCADA specialists to support the FLISR (Fault Location, Isolation and Service Restoration) systems; higher unclaimed meter costs than forecast; and a delay in the forecast operator attrition resulting from the Distribution Control Center consolidation project.
14	Electric	BF	Patrol and Inspections	46,545	47,866	49,270	143,680	56,810	50,235	51,884	158,929	15,248	Program expenses for 2014-2016 are forecast to exceed adopted amounts due to an increased volume of patrol and inspection units from new field asset installations and map updates; an increased frequency of wildfire patrols and inspections to help mitigate wildfire-related risk; higher unit costs due to changes in inspector resources, increased focus on work quality, and increased minor maintenance work during inspections; and additional focus on asset strategy projects and reliability improvements. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002 Q03.

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				Source of 2014 and 2015 Adopted: PG&E's Response to Data Request ED-004 Source of 2016 Adopted: PG&E's Budget Compliance Report (November 2014)				Source of 2014 and 2015 Actuals: PG&E's Response to Data Request ED-004 Source of 2016 Forecast: PG&E's Financial Systems (as of August 31, 2016)					
				2014 Authorized (a)	2015 Authorized (b)	2016 Authorized (c)	Total 2014-2016 Authorized (d = a+b+c)	2014 Actual (e)	2015 Actual (f)	2016 Forecast (g)	Total 2014-2016 Actual/Forecast (h = e+f+g)	Variance from 2014- 2016 Authorized (i = h-d)	
15	Electric	BH	Corrective Maintenance	73,193	75,478	77,872	226,543	82,319	82,638	104,521	269,479	42,936	Program expenses for 2014-2016 are forecast to exceed adopted levels due to higher-than-planned-volume of routine emergencies and higher-than-planned unit cost. Routine emergency work is driven by many unpredictable factors, such as weather events that are not major emergencies, third-party damage to PG&E facilities, and unplanned outages. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002 Q04.
16	Electric	BK	Distribution Line Equipment Overhauls	2,731	2,812	2,897	8,440	2,161	2,718	2,677	7,556	(884)	N/A
17	Electric	DN	Technical Training Curriculum	688	709	730	2,127	1,336	2,073	3,088	6,497	4,370	N/A
18	Electric	FZ	Electric Engineering - Distribution Planning, Operations and Power	23,919	24,685	25,482	74,086	23,660	21,156	20,204	65,020	(9,066)	N/A
19	Electric	GA	Pole Test and Treat	12,440	12,777	13,148	38,366	11,076	12,490	11,674	35,239	(3,126)	N/A
20	Electric	GC	Operate and Maintain Substations	38,842	39,989	41,199	120,029	41,751	41,662	43,066	126,480	6,450	N/A
21	Electric	GE	Electric Mapping and Records Management	31,405	32,422	33,478	97,305	3,538	6,443	4,629	14,610	(82,695)	Program expenses for 2014-2016 are forecast to be below adopted levels due to the rescheduling of Records and Information Management (RIM) projects, and lower-than-expected base mapping costs resulting from technology changes. As discussed in PG&E's 2017 GRC testimony and workpapers, some of the RIM improvement work adopted in PG&E's 2014 GRC was rescheduled due to the delayed deployment of two foundational technology projects: (1) the Enterprise Content Management System - Documentum D2; and (2) the Electric Distribution Asset Management and Geographic Information System. PG&E also adjusted the scope of the RIM projects identified in the 2014 GRC to reflect information learned since the 2014 GRC forecasts were developed in 2012. Additionally in 2016, \$9.8 million was transferred from Electric Distribution to the Enterprise Records and Information Management Program. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002 Q01.
22	Electric	HG	Electric Distribution Operations Technology Activities	776	801	827	2,404	0	0	0	0	(2,404)	N/A
23	Electric	HN	Vegetation Management	190,000	194,153	198,813	582,966	189,673	194,094	197,809	581,577	(1,389)	N/A
24	Electric	HX	Distribution Automation & Protection, Engineering Support	2,042	2,104	2,169	6,314	2,155	2,088	2,106	6,350	36	N/A
25	Electric	IF	Major Emergency	40,848	41,863	42,949	125,660	44,916	126,637	100,672	272,225	146,565	Program expenses for 2014-2016 are forecast to exceed adopted levels due to severe weather events and wildfires that occurred in 2015 and 2016, and vegetation-related work from 2015 fires that is being completed in 2016. The recorded amounts also include costs that are eligible for recovery through the Catastrophic Events Memorandum Account (CEMA). The total amounts of these eligible costs are being finalized and will be included in a future CEMA application.
26	Electric	JV	Technology	10,870	11,160	11,473	33,503	4,198	5,113	3,655	12,967	(20,536)	Program expenses for 2014-2016 are forecast to be below adopted levels due to the rescheduling of several key mobile projects to leverage fixes expected to be delivered by the Enterprise Mobile Platform solution underway in 2016. In addition, some solutions with significant expenses were accelerated in 2013. Finally, some projects started later than planned due to a rigorous technology prioritization process in 2014. See PG&E's response to Data Request ED-002-Q02 for details on 2014 and 2015 spending.
27	Electric	KA	Overhead Preventive Maintenance and Equipment Repair	53,893	55,446	57,093	166,433	55,335	62,548	53,830	171,714	5,281	N/A
28	Electric	KB	Underground Preventive Maintenance and Equipment Repair	17,360	17,863	18,396	53,619	26,222	25,358	24,505	76,086	22,467	Program expenses for 2014-2016 are forecast to exceed adopted amounts due to higher unit costs; higher volume of work than planned in underground facilities maintenance work; emergent cable splice work in Foster City; a higher allocation of transformer refurbishment costs; and additional projects such as wye-type transformer inspections and grounding.
29	Electric	KC	Network Preventive Maintenance and Equipment Repair	6,028	6,201	6,384	18,612	6,577	6,444	5,950	18,970	358	N/A
30	Generation	AX	Maintain Reservoirs, Dams & Waterways	36,032	36,994	38,094	111,120	23,989	26,344	30,042	80,374	(30,746)	Program expenses for 2014-2016 are forecast to be less than adopted primarily because the 2014 GRC forecast included significant repair/modification costs for dams and water conveyance systems as a result of PG&E's then newly implemented Asset Management program. While PG&E increased that type of spending, some of the work proved to be capital work (rather than expense) once the work was better-scoped, and some work was not necessary. Additionally, some of the projects were rescheduled due to scoping, access, and/or permitting issues, and various dredging projects were rescheduled due to higher priority work and/or permitting delays. For details on 2014 spending, see PG&E's response to Data Request ED-003-Q01.
31	Generation	BI	Maintain Buildings	0	0	0	0	262	453	0	715	715	N/A

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				2014 Authorized (a)	2015 Authorized (b)	2016 Authorized (c)	Total 2014-2016 Authorized (d = a+b+c)	2014 Actual (e)	2015 Actual (f)	2016 Forecast (g)	Total 2014-2016 Actual/Forecast (h = e+f+g)	Variance from 2014- 2016 Authorized (i = h-d)	
32	Generation	BR	Operate Diablo Canyon Power Plant	98,107	101,203	104,427	303,738	104,713	99,064	110,756	314,533	10,795	Program expenses in 2014-2016 are forecast to exceed adopted amounts due to the manner in which certain adjustments were made to PG&E's MWC BR forecast as a result of the 2014 GRC Decision. The adjustments were reflected entirely within MWC BR, even though only a portion of the adjustments were applicable to MWC BR. If instead only the \$3.0 million of the adjustments directly applicable to MWC BR had been removed from MWC BR, the actual MWC BR expenses would have been very close to the adopted amount for this MWC. For details on 2014 spending, see PG&E's response to Data Request ED-003-Q02.
33	Generation	BS	Maintain Diablo Canyon Power Plant Assets	182,946	188,306	193,949	565,200	165,387	149,514	140,740	455,640	(109,560)	Program expenses in 2014-2016 are forecast to be lower than adopted primarily due to various balancing account-related expenses being recorded in MWC IG instead of MWC BS. Subsequent to the issuance of the 2014 GRC Decision, PG&E created a new MWC IG to record balancing account expenses. After removing the \$14.6 million adopted for the balancing account expenses, the revised 2014 adopted amount for MWC BS is \$168.3 million, which is \$3 million higher than the actual 2014 program expense for MWC BS. Similarly, for 2015 and 2016, balancing account amounts reclassified to MWC IG reduce the variance by \$14.6 million plus inflation. An additional consideration is that the 2014 adopted amount included \$37.7 million for Diablo Canyon's second refueling outage that occurred in 2014; the offset to reflect the fact that there is no outage in 2015 and 2016 is in MWC AB. After adjusting for these items, MWC BS spending will actually exceed its adopted amounts. This is attributable to longer outage durations than originally planned, higher headcount than originally planned and emergent expense project work. For details on 2014 spending, see PG&E's response to Data Request ED-003-Q04.
34	Generation	BV	Maintain Diablo Canyon Power Plant Configuration	61,116	62,944	64,864	188,924	55,634	58,149	58,837	172,620	(16,304)	Program expenses in 2014-2016 are forecast to be less than adopted primarily because the 2014 actual amount includes \$8.9 million of costs associated with Diablo Canyon's second refueling outage that occurred in 2014;while the offset to reflect the fact that there is no outage in 2015 and 2016 is in MWC AB. After adjusting for these items, MWC BV spending will actually exceed the adopted amounts. This is attributable to emergent engineering evaluation contract work.
35	Generation	KG	Operate Hydroelectric Generation	50,868	52,371	54,009	157,248	50,574	52,693	50,903	154,170	(3,078)	N/A
36	Generation	KH	Maintain Hydroelectric Generating Equipment	29,396	30,180	31,078	90,653	32,703	31,348	32,692	96,743	6,090	N/A
37	Generation	KI	Maintain Hydroelectric Structures, Roads and Infrastructure	12,845	13,155	13,529	39,530	10,859	14,248	11,729	36,836	(2,694)	N/A
38	Generation	KK	Operate Fossil Generation	14,543	14,971	15,431	44,945	15,033	15,488	17,006	47,526	2,581	N/A
39	Generation	KL	Maintain Fossil Generating Equipment	31,198	31,927	32,775	95,901	19,839	43,225	45,247	108,311	12,411	Program expenses in 2014 were less than adopted primarily due to the leveling of Fossil Long Term Service Agreements (LTSA) costs per the 2014 GRC Decision. PG&E generally incurs LTSA costs when there are major outages at fossil plants, and actual spending in 2014 was less than adopted because no major Fossil LTSA outages occurred in 2014. Program expenses in 2015-2016 are forecast to exceed adopted amounts primarily due to the leveling of the Fossil LTSA costs per the 2014 GRC Decision. In 2015, a major LTSA outage occurred at Colusa; a major LTSA outage occurred at Gateway in 2016. Therefore, actual costs in 2015 and 2016 are greater than the leveled cost in the adopted amount. For details on 2014 spending, see PG&E's response to Data Request ED-003-Q05.
40	Generation	KM	Maintain Fossil Buildings, Grounds, and Infrastructure	2,962	3,027	3,104	9,093	2,580	2,434	2,507	7,521	(1,571)	N/A
41	Generation	KQ	Operate Alternative Generation	354	362	371	1,087	290	289	438	1,017	(69)	N/A
42	Generation	KR	Maintain Alternative Generation Generating Equipment	1,096	1,126	1,159	3,381	1,219	429	562	2,210	(1,171)	N/A
43	Generation	KS	Maintain Alternative Generation Grounds, and Infrastructure	105	108	110	324	50	67	82	199	(125)	N/A
44	Generation	IG	Manage Variable Balancing Account Processes	0	0	0	0	8,625	16,542	23,740	48,907	48,907	Program expenses in 2014-2016 are forecast to exceed adopted amounts primarily because the adopted amounts for these expenses are reflected within the adopted amount for MWC BS. Subsequent to the issuance of the 2014 GRC Decision, PG&E created MWC IG to record balancing account expenses. MWC IG program expenses in 2014 were less than the \$14.6 million adopted (included in MWC BS) primarily due to lower-than-forecasted Fukushima expenses. For details on 2014 spending, see PG&E's response to Data Request ED-003-Q03.
45	Other	BI	Maintain Buildings	23,126	23,793	24,480	71,398	10,487	8,467	12,966	31,920	(39,478)	Program spending in 2014-2016 are forecast to be below adopted amounts largely due to the reallocation of some program funds to higher priority work through the integrated planning process. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-004-Q05.
46	Other	FL	Safety Engineering & Occupational Safety and Health Administration (OSHA) Compliance	15,651	16,173	16,712	48,535	18,491	24,382	24,094	66,967	18,432	Program spending in 2014-2016 are forecast to exceed adopted amounts to support work for the implementation of the Safety Culture program and the contractor safety program. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-004-Q06.

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THOUSANDS OF NOMINAL DOLLARS
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Line	LOB	Expense MWC	Expense MWC Description	Amounts Adopted in the 2014 GRC Decision				Actual/Forecast Expenditures					Notes (for variances exceeding \$10 million over the 2014 through 2016 period) See Appendix B for referenced data request responses.
				Source of 2014 and 2015 Adopted: PG&E's Response to Data Request ED-004 Source of 2016 Adopted: PG&E's Budget Compliance Report (November 2014)				Source of 2014 and 2015 Actuals: PG&E's Response to Data Request ED-004 Source of 2016 Forecast: PG&E's Financial Systems (as of August 31, 2016)					
				2014 Authorized (a)	2015 Authorized (b)	2016 Authorized (c)	Total 2014-2016 Authorized (d = a+b+c)	2014 Actual (e)	2015 Actual (f)	2016 Forecast (g)	Total 2014-2016 Actual/Forecast (h = e+f+g)	Variance from 2014- 2016 Authorized (i = h-d)	
47	Other	JV	Maintain Information Technology Applications & Infrastructure	271,151	279,622	288,371	839,144	244,866	262,308	271,808	778,982	(60,162)	Program spending in 2014 was lower than the adopted amount primarily due to a reprioritization of funds to support higher-priority programs; reduced vendor support costs for new technology solutions; and gaining efficiencies in vendor support agreements. In 2015, program spending was lower than adopted primarily due to a reprioritization of funds to support higher-priority programs; continued efficiencies in vendor support agreements; and a resequencing of lifecycle efforts to cover high priority Disaster Recovery projects within the Datacenter Technologies solutions. For 2016, PG&E forecasts expenditures will be less than adopted primarily due to a reprioritization of funds to support higher-priority programs; and gaining efficiencies in vendor support and other PG&E's SuperFit initiatives.
48	Other	Risk and Aux Corporate Risk Organization Immediate Office Department		1,098	1,132	1,167	3,398	976	1,244	589	2,809	(589)	N/A
49	Other	Risk and Aux Market and Credit Risk Department		6,955	7,187	7,426	21,569	6,319	6,270	4,499	17,088	(4,481)	N/A
50	Other	Risk and Aux Internal Auditing Department		8,174	8,445	8,726	25,345	8,366	9,770	10,021	28,157	2,812	N/A
51	Other	Risk and Aux Enterprise and Operational Risk Management (EORM) and Insurance		2,450	2,531	2,615	7,596	2,306	2,257	1,928	6,492	(1,105)	N/A
52	Other	Risk and Aux Corporate Security Department		5,382	5,556	5,736	16,674	4,116	5,634	5,160	14,910	(1,764)	N/A
53	Other	Human Resources PG&E Academy Department Costs		8,850	9,127	9,413	27,390	8,551	9,138	9,212	26,901	(489)	N/A
54	Other	JV	Information Technology Project Costs (Corporate Services Department)	10,769	11,108	11,457	33,334	3,158	3,286	5,679	12,123	(21,211)	Program expenses in 2014 were lower than the adopted primarily due to resequencing new improvement projects within the Risk organization to develop a physical security strategy first; completing annual Human Resource projects efficiently; and reprioritizing and resequencing various minor enhancement projects for Finance and Regulatory systems. In 2015, program expenses were lower than adopted primarily due to the efficient implementation of the Cost Model redesign project in Finance; resequencing new improvement projects within the Risk organization to develop a physical security strategy first; and executing Regulatory Rate Model projects as capital (instead of expense as originally planned). For 2016, PG&E forecasts program expenses will be less than adopted primarily due to a reprioritization of funds to support higher-priority programs; delays in certain projects due a reorganization of physical security management; and reclassifying annual Human Resources project costs as recurring maintenance programs under IT Baseline. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-004-Q08.
55				1,818,173	1,867,184	1,919,328	5,604,685	1,751,465	1,903,147	1,976,327	5,630,938	26,253	

PACIFIC GAS AND ELECTRIC COMPANY
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ADOPTED AND ACTUAL/FORECAST EXPENDITURES FOR SAFETY-RELATED CAPITAL MAJOR WORK CATEGORIES FROM THE 2014 GENERAL RATE CASE
THOUSANDS OF NOMINAL DOLLARS
(\$000)

Line	LOB	Capital MWC	Capital MWC Description	Amounts Adopted in the 2014 GRC Decision <small>Source of Adopted Amounts: PG&E's Response to Data Request ED-001</small>				Actual/Forecast Expenditures <small>Source of 2014/2015 Actuals and 2016 Forecast: PG&E's Response to Data Request ED-001</small>					Notes <small>(for variances exceeding \$10 million over the 2014 through 2016 period)</small> <small>See Appendix B for referenced data request responses.</small>
				2014 adopted (a)	2015 adopted (b)	2016 adopted (c)	Total 2014-2016 adopted (d = a+b+c)	2014 Actual (e)	2015 Actual (f)	2016 Forecast (g)	Total 2014-2016 Actual/Forecast (h = e+f+g)	Variance from 2014-2016 adopted (i = h-d)	
1	Gas	14	Gas Distribution Pipeline Replacement Program	303,973	262,385	268,234	834,592	188,224	235,633	304,654	728,512	(106,080)	Program expenditures in 2014-2016 are forecast to be below adopted levels. The 2014 underspend was due to the timing of and uncertainty associated with the final 2014 GRC decision, as well as the implementation of a service replacement policy that resulted in a reduction in the program costs for main replacements compared to the 2014 GRC forecast. In addition, 2015 program expenditures were less than adopted due to the reallocation of some program funding to support higher priority service replacements (in MWC 50). For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002-Q18.
2	Gas	27	Gas Meter Protection - Capital	245	211	216	672	1,877	639	204	2,720	2,048	N/A
3	Gas	47	Gas Distribution Capacity	15,045	12,986	13,276	41,306	25,907	26,960	36,656	89,524	48,217	Program expenditures for 2014 and 2015 exceeded adopted amounts due to significant increases in unit costs; this increase persists into 2016. In addition, the number of units installed in 2014-2015 were slightly higher than initially forecast.
4	Gas	50	Gas Distribution Reliability General	111,404	96,163	98,306	305,874	124,168	171,002	215,403	510,573	204,699	Program expenditures in 2014-2016 are forecast to exceed adopted amounts primarily due to increased spending related to a newly implemented policy for service replacements. The service replacement policy requires leaking services of specific material types to be replaced (instead of being repaired), to reduce future leak risks.
5	Gas	52	Gas Distribution Leak Replacement/Emergency	610	527	538	1,675	8,007	1,439	1,193	10,639	8,964	N/A
6	Gas	74	Install New Gas Meters	4,021	3,471	3,548	11,039	4,849	4,311	4,402	13,562	2,523	N/A
7	Gas	2K	Gas Distribution Replacement/Convert Customer High-Pressure Regulatory (HPR)	50,835	43,880	44,858	139,573	24,688	17,786	32,591	75,065	(64,507)	Program expenditures in 2014-2016 are forecast to be less than the adopted amounts primarily due to changes in the program plan. The HPR program plan presented in the 2014 GRC was to replace/rebuild all HPRs by the end of 2015 at a pace of about 1,000 units per year. However, based on later risk-informed decision-making, PG&E reduced the HPR program pace starting in 2013, towards a low of a little over 100 units in 2015. PG&E has continued to refine and improve its assessment of risks since 2013. The 2016 plan is to complete an increased level of 300 rebuild/replacement units based on the revised relative risk associated with HPRs.
8	Gas	4A	Gas Distribution Central Operations Assets	53,170	45,896	46,919	145,984	25,557	26,676	27,363	79,596	(66,388)	Program expenditures in 2014-2016 are forecast to be less than adopted amounts for two reasons. First, PG&E reduced the pace of deployment after PG&E determined that a slower program deployment (completion in 2021) would not significantly alter the safety benefits of the original deployment plan. Second, PG&E identified design changes that reduced unit costs. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002-Q20.
9	Electric	05	Tools & Equipment	-40,641	-35,081	-35,863	-111,585	6,709	4,617	7,272	18,598	130,183	Program expenditures in 2014-2016 are forecast to exceed adopted amounts primarily due to planned program efficiencies in MWC 05 (planned as program credits in the 2014 GRC) being realized in other MWCs instead. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002-Q10.
10	Electric	06	Distribution Line and Equipment Capacity	107,349	92,662	94,728	294,740	94,291	95,722	109,663	299,676	4,936	N/A
11	Electric	07	Pole Replacement	69,215	59,745	61,077	190,036	111,797	103,053	86,767	301,618	111,581	Program expenditures in 2014-2016 are forecast to exceed adopted amounts due to higher-than-planned pole replacements and higher-than-planned costs for complex jobs. Additionally, center bore streetlight pole replacements were expected to be completed in 2013, and this work is still in progress. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002-Q11.
12	Electric	08	Base Reliability and Conductor Replacements - Mitigate Recurring Outages	61,603	53,174	54,360	169,137	42,682	29,661	44,098	116,441	(52,696)	Program expenditures in 2014-2016 are forecast to be less than adopted primarily due to an accounting change. MWC 08's adopted amounts include costs of the Line Recloser Revolving Stock and Base Reliability Program. Starting in 2014, PG&E charged the costs of these two subprograms (Line Recloser Revolving Stock and Base Reliability Program) to MWC 49. MWC 08 is now primarily focused on replacing deteriorated overhead conductor. In addition, 2014 program expenditures declined because crews focused on storm response in December 2014 and some projects were rescheduled to 2015. Program expenditures in 2015 were less than adopted because PG&E reprioritized some overhead conductor replacements (to support higher priority storm response and new business work) and rescheduled some reliability projects to 2016. Program expenditures in 2016 are forecast to be lower due to favorable unit costs. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002-Q07.
13	Electric	09	Distribution Automation	56,863	49,084	50,178	156,125	45,620	44,281	48,467	138,367	(17,757)	Program expenditures in 2014-2016 are forecast to be less than adopted due an extension of the timeline to complete PG&E's substation SCADA deployment from 2017 to 2019, which will better balance expenditures and better integrate the work with other programs.

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Line	LOB	Capital MWC	Capital MWC Description	Amounts Adopted in the 2014 GRC Decision <small>Source of Adopted Amounts: PG&E's Response to Data Request ED-001</small>				Actual/Forecast Expenditures <small>Source of 2014/2015 Actuals and 2016 Forecast: PG&E's Response to Data Request ED-001</small>					Notes <small>(for variances exceeding \$10 million over the 2014 through 2016 period)</small> <small>See Appendix B for referenced data request responses.</small>
				2014 adopted (a)	2015 adopted (b)	2016 adopted (c)	Total 2014-2016 adopted (d = a+b+c)	2014 Actual (e)	2015 Actual (f)	2016 Forecast (g)	Total 2014-2016 Actual/Forecast (h = e+f+g)	Variance from 2014-2016 adopted (i = h-d)	
14	Electric	17	Emergency Response	118,898	102,631	104,919	326,447	135,705	145,786	166,851	448,342	121,895	Routine emergency work is driven by many unpredictable factors such as weather events that do not meet major emergency criteria, third party-damage to PG&E facilities, and unplanned outages. Program expenditures in 2014-2016 are forecast to exceed adopted amounts due to higher facility replacement costs in response to outages. This cost increase was driven by an increase in work volume, as well as higher-than-planned unit costs attributed to (1) higher contract, material, and overhead costs; and (2) increased hours per unit due to the complexity of the outages. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002-Q14.
15	Electric	23/78	Implement Real Estate Strategy/Manage Buildings	3,902	3,368	3,443	10,714	2,670	2,175	138	4,984	(5,730)	N/A.
16	Electric	46	Distribution Substation Capacity	74,501	64,308	65,742	204,551	67,051	68,301	48,487	183,839	(20,712)	Program expenditures in 2014-2016 are forecast to be less than adopted to fund higher-priority work in other MWCs (such as pole replacement, routine emergency, maintenance and work requested by others).
17	Electric	48	Replace Substation Equipment	65,676	56,691	57,954	180,321	32,220	49,184	68,007	149,411	(30,910)	Program expenditures in 2014-2016 are forecast to be less than adopted due to a reallocation of some program funds to support higher priority work, rescheduling of non-critical switchgear replacement projects, lower-than-planned expenditures on several switchgear projects, and a lower volume of circuit breaker projects in 2015. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002-Q05.
18	Electric	54	Distribution Transformer Replacements	64,515	55,689	56,930	177,135	30,920	46,571	42,256	119,747	(57,388)	Program expenditures in 2014-2016 are forecast to be less than adopted due to changes in project construction schedules (to better-coordinate station projects), reallocation of some project funds to support substation emergency replacements and other higher priority work, and the reprioritization of transformer replacement projects. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-002-Q06.
19	Electric	56	Underground Asset Management Program	100,780	86,992	88,931	276,702	81,219	90,905	107,678	279,801	3,098	N/A
20	Electric	58	Distribution Substation Safety	3,110	2,685	2,744	8,539	1,230	3,222	1,471	5,924	(2,616)	N/A
21	Electric	59	Distribution Substation Emergency Equipment Replacement	40,797	35,215	36,000	112,012	35,526	34,092	30,894	100,512	(11,500)	Programs expenditures in 2014-2016 are forecast to be lower than adopted due to fewer substation emergency replacements than historical levels.
22	Electric	63	Distribution Control Center Project/Facility Improvements	33,672	29,065	29,713	92,450	43,155	20,591	4,385	68,131	(24,319)	Program expenditures in 2014-2016 are forecast to be less than adopted due to the completion of the Distribution Control Center Consolidation project, with a majority of the project work being completed in 2013-2015.
23	Electric	95	Major Emergency	49,040	42,331	43,274	134,645	48,838	128,686	64,396	241,919	107,274	Program expenditures in 2015 and 2016 are above adopted amounts due to severe weather events and wildfires, and to vegetation-related work from the 2015 fires being completed in 2016; program expenditures in 2014 were comparable to adopted amounts. Recorded amounts include costs eligible for recovery through CEMA, and these eligible costs will be included in a future CEMA application. For details on 2015 spending, see PG&E's response to Data Request ED-002-Q13.
24	Electric	2A	Overhead Preventive Maintenance and Equipment Repair	101,171	87,329	89,276	277,776	95,421	109,976	125,265	330,662	52,886	Program expenditures in 2014-2016 are forecast to exceed adopted amounts due to a higher volume of units for overhead notifications and critical operating equipment, and increased spending for regulated output streetlights.
25	Electric	2B	Underground Preventive Maintenance and Equipment Repair	35,411	30,566	31,247	97,224	55,744	43,506	47,879	147,130	49,906	Program expenditures for 2014-2016 are forecast to exceed adopted amounts due to higher volume of units for underground notifications and critical operating equipment, and higher-than-forecast costs for underground enclosure work.
26	Electric	2C	Network Preventive Maintenance and Equipment Repair	19,510	16,841	17,216	53,568	15,699	19,694	13,704	49,097	(4,471)	N/A
27	Electric	2F	Technology	56,059	48,389	49,468	153,916	55,949	33,303	23,664	112,916	(41,000)	Program expenditures in 2015 were less than adopted due to (1) completing the Electric Distribution Asset Management Geographic Information System project under budget; (2) reclassifying some capital costs to expenditure for the Estimator Work Management and SAP Work Management projects due to project delivery changes; and (3) rescheduling some workforce mobilization projects to leverage capabilities delivered through the Enterprise Mobile Platform in 2016 and later. For details on 2015 spending, see PG&E's response to Data Request ED-002-Q09. Program expenditures in 2016 are forecast to be less than adopted primarily due to (1) resequencing the SCADA Upgrade project and (2) a later delivery of capabilities from the Enterprise Mobile Platform. For details on 2015 spending, see PG&E's response to Data Request ED-002-Q09.
28	Generation	20	Diablo Canyon Power Plant Capital	237,507	205,012	209,583	652,102	171,131	178,389	174,953	524,473	(127,629)	Program expenditures in 2014-2016 are forecast to be less than adopted primarily due to reclassification of capital balancing account expenditures of \$45.2 million, \$60.9 million, and \$62.6 million, respectively from MWC 20 to MWC 3I. Accounting for this adjustment, 2014-2016 expenditures exceeded adopted amounts due to schedule revisions and increased scope for various security projects.

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(\$000)

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				Source of Adopted Amounts: PG&E's Response to Data Request ED-001				Source of 2014/2015 Actuals and 2016 Forecast: PG&E's Response to Data Request ED-001					
				2014 adopted (a)	2015 adopted (b)	2016 adopted (c)	Total 2014-2016 adopted (d = a+b+c)	2014 Actual (e)	2015 Actual (f)	2016 Forecast (g)	Total 2014-2016 Actual/Forecast (h = e+f+g)	Variance from 2014-2016 adopted (i = h-d)	
29	Generation	2L	Install/Replace for Hydro Safety & Regulation	47,475	40,980	41,893	130,348	39,312	32,712	44,238	116,262	(14,086)	Program expenditures in 2014 were less than adopted primarily due to reduced contractor costs, cancellation of lower-priority projects, and rescheduling certain projects due to planned outage schedules. In 2015, program expenditures were less than adopted primarily due to project permitting delays that delayed work to 2016 and to higher realized capital efficiencies. Program expenditures for 2016 are forecast to be slightly higher than adopted due to the rescheduling of previous year work into 2016. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-003-Q07.
30	Generation	2M	Install/Replace Hydro Generating Equipment	111,168	95,958	98,098	305,224	91,780	109,933	107,447	309,159	3,935	N/A
31	Generation	2N	Install/Replace Resv, Dams & Waterway	79,079	68,260	69,781	217,120	49,063	52,214	55,081	156,358	(60,762)	Program expenditures for 2014 were below adopted due to the rescheduling of Potter Valley penstock work, cancellation of the Centerville penstock replacement, and reduced canal project costs. For 2015 and 2016, adopted amounts are based on an average of historical costs, rather than specific project costs. Consequently, a detailed comparison of actuals to adopted is not possible for 2015 and 2016. Generally, program expenditures for 2016 are forecast to be less than adopted due to three primary factors: permitting delays, rescheduling for outage optimization, and lower-than-anticipated construction costs. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-003-Q09.
32	Generation	2P	Install/Replace Hydro Sctr, Roads & Infrastructure	15,068	13,007	13,297	41,372	8,238	11,727	24,641	44,606	3,234	N/A
33	Generation	2R	Install/Replace for Fossil Safety & Reg	0	0	0	0	657	122	2,316	3,095	3,095	N/A
34	Generation	2S	Install/Replace Fossil Generating Equipment	855	738	755	2,349	8,701	5,897	7,906	22,504	20,155	Program expenditures for 2014 were above adopted due to an emergent project for major work on the Colusa Generating Station steam turbine generator. For 2015 and 2016, adopted amounts are based on an average of historical costs, rather than specific project costs. Consequently, a comparison of actuals to adopted is not possible for 2015 and 2016. Program expenditures in 2015 included specific project expenditures, such as the purchase of a spare transformer for Humboldt Bay Generating Station and emergent work to replace a transformer bushing and a condenser fan blade at Colusa Generating Station. In 2016, program expenditures included specific project expenditures, such as the Gateway Steam Turbine Blade Replacement and the Gateway Steam Turbine Generator Field Rewind. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-003-Q11.
35	Generation	2T	Install/Replace Fossil Building and Grounds Infrastructure	626	541	553	1,719	49	2,249	593	2,891	1,172	N/A
36	Generation	3A	Install/Replace for Alternate Generating Safety & Regulation	40	35	35	110	28	0	0	28	(82)	N/A
37	Generation	3B	Install/Replace Alternate Generating Equipment	0	0	0	0	187	289	11	488	488	N/A
38	Generation	3I	Nuclear Safety and Security	0	0	0	0	44,099	43,286	36,012	123,398	123,398	Program expenditures in 2014-2016 are forecast to exceed adopted amounts primarily because the adopted amounts for these expenditures were reflected within the adopted amount for MWC 20. Subsequent to the issuance of the 2014 GRC Decision, PG&E created a new MWC 3I to record the capital balancing account expenditures. The MWC 3I program expenditures in 2014 were less than the \$58.9 million adopted (included in MWC 20) primarily due to delays in implementing Reactor Cooling Pumps Thermal Seal projects and Fire Detection modifications – both of which require refueling outage windows and vendor acceptance testing. Similarly, MWC 3I program expenditures in 2015 were less than the \$60.9 million adopted (included in MWC 20) primarily due to delays in implementing the Fire Detection and Hot Shut Down modifications and an over estimate of 2015 Fukushima capital program costs. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-003-Q13.
39	Other	22	Maintain Buildings	43,406	37,467	38,302	119,175	45,317	43,701	41,861	130,879	11,704	Program spending in 2014-2016 are forecast to exceed adopted level largely to reflect the reallocation funds (through the integrated planning process) from other MWCs to support high-priority building work in this MWC. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-004-Q09.
40	Other	2F	Build IT Applications & Infrastructure	218,178	188,328	192,526	599,031	182,039	199,885	172,405	554,329	(44,703)	Program spending in 2014 was lower than the adopted amount primarily due to the rescheduling of the Telecomm Network Enhancement Project to address vendor constraints, and reprioritizing and rescheduling various lifecycle projects. In 2015, program spending was higher than adopted primarily due to additional expenditures on Disaster Recovery projects within the Datacenter Technologies solutions, and unplanned implementation costs on key enterprise project management solutions. For 2016, PG&E forecasts expenditures will be less than adopted primarily due to the additional Disaster Recovery project work done in 2015 in Datacenter Technologies solutions. For details on 2014 and 2015 spending, see PG&E's response to Data Request ED-004-Q10.
41	Other	2F	Build IT Applications & Infrastructure	32,864	28,368	29,000	90,232	19,067	34,991	30,969	85,027	(5,205)	N/A
42				2,346,999	2,025,893	2,071,058	6,443,950	2,065,393	2,273,168	2,362,241	6,700,802	256,852	

PACIFIC GAS AND ELECTRIC COMPANY
APPENDIX B
DATA REQUEST RESPONSES REFERENCED IN
EXHIBIT (PG&E-44) APPENDIX A

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2017 General Rate Case Phase I
Application 15-09-001
Data Response

PG&E Data Request No.:	ED_002-Q01		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q01		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 1

Electric Distribution Expense – For the program Electric Mapping and Records Management please provide the following:

- a) A narrative explanation as to the reason that 2014 and 2015 expense was approximately \$27.868 and \$24.962 million respectively below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 1

- a) For 2014 and 2015, the Electric Mapping and Records Management program expenses were below authorized levels due to rescheduling of Records and Information Management (RIM) projects, and lower than expected base mapping costs due to decreased non-project related mapping resulting from technology changes.

As discussed in PG&E's 2017 General Rate Case (GRC) filed testimony and workpapers, some of the RIM improvement project work forecast in PG&E's 2014 GRC was rescheduled due to the delayed deployment of two foundational technology projects: (1) PG&E's Enterprise Content Management System – Documentum (D2); and (2) the Electric Distribution Asset Management and Geographic Information System (ED AM/GIS). PG&E also adjusted the scope of the RIM projects identified in the 2014 GRC to reflect information learned since the 2014 GRC forecasts were developed in 2012. See Exhibit (PG&E-4), Chapter 16, pages 16-5 through 16-7 in attachment GRC-2017-PhI_DR_ED_002-Q01Atch01, and workpaper pages WP 16-13 through WP 16-16 and WP 16-20 through WP 16-25 in attachment GRC-2017-PhI_DR_ED_002-Q01Atch02 for additional information.

- b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.
- c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 16
ELECTRIC DISTRIBUTION MAPPING
AND RECORDS MANAGEMENT

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 16
ELECTRIC DISTRIBUTION MAPPING AND RECORDS MANAGEMENT

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PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 16
ELECTRIC DISTRIBUTION MAPPING
AND RECORDS MANAGEMENT

A. Introduction

1. Scope and Purpose

The purpose of this chapter is to demonstrate that Pacific Gas and Electric Company's (PG&E) expense forecast for its Electric Distribution Mapping, and Records and Information Management (RIM) programs¹ is reasonable and should be adopted by the California Public Utilities Commission (CPUC or Commission). Through these programs, PG&E records and maintains information about its 141,000 miles of overhead and underground Electric Distribution lines and associated substations, in millions of records and in multiple databases. The Electric Distribution Mapping and RIM programs will enhance PG&E's ability to provide safe and reliable service to customers, and a safe working environment for employees.

2. Summary of Request

PG&E requests that the CPUC adopt its 2017 expense forecast of \$10.6 million for the Electric Distribution Mapping and RIM programs.² The 2017 forecast for the Electric Distribution Mapping and RIM programs is approximately \$7.1 million, or 203 percent, higher than 2014 recorded expenses of \$3.5 million.

Forecasts in this chapter are shown with escalation at the MWC level. At the sub-program level, all costs are shown without escalation in order to provide an easier year over year comparison.³

¹ In 2015, the name of the Records Management Program was changed to Records and Information Management.

² See WP 16-1, Line 2, Exhibit (PG&E-4).

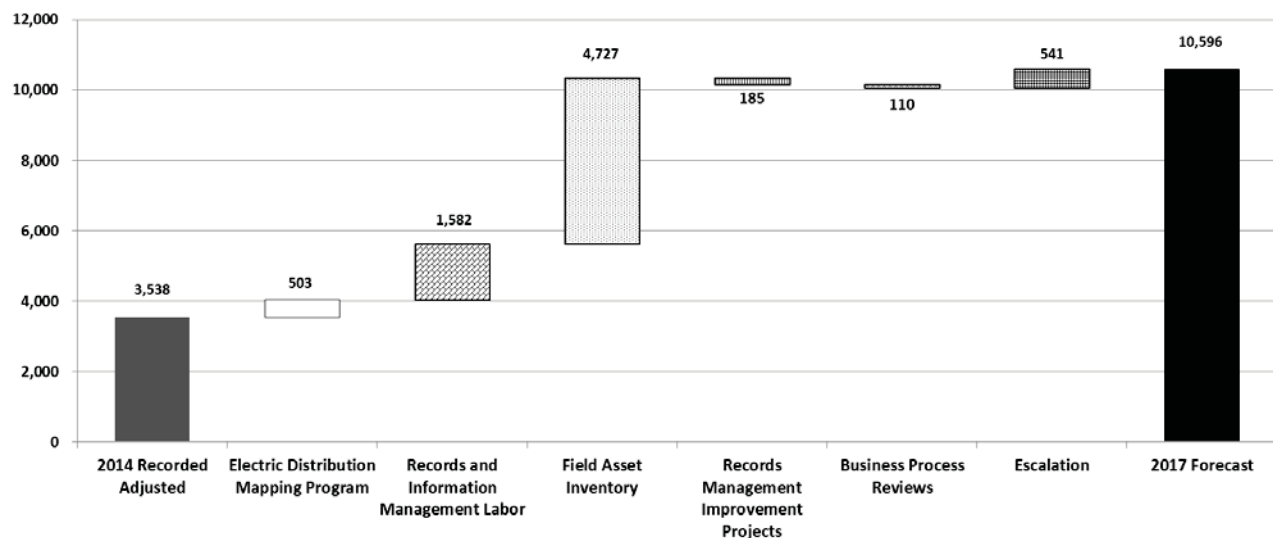
³ See Exhibit (PG&E-4), Chapter 19 for more information on escalation.

1 B. Activities and Costs

2 1. Overview of Recorded and Forecast Costs

3 Costs for the Electric Distribution Mapping and RIM programs are
 4 recorded in Major Work Category (MWC) GE. As shown in Figure 16-1
 5 below, the main drivers of the increase from 2014 recorded costs to 2017
 6 forecast amounts are increases in RIM labor and the Field Asset Inventory
 7 (FAI) Project.

FIGURE 16-1
MWC GE EXPENSE WALK BY PROGRAM 2014-2017
(THOUSANDS OF NOMINAL DOLLARS)



8 2. Program Description

9 a. Program Overview

10 The key objectives of the Electric Distribution Mapping and RIM
 11 programs are to systematically maintain complete and accurate records,
 12 maps and asset data to support PG&E's ability to provide safe and
 13 reliable electric service. Additionally, both programs support regulatory
 14 compliance, support mitigation of asset failure risks, document asset
 15 investment decisions, and provide necessary records for effective and
 16 efficient utility operations.

17 Electric Distribution Mapping program work is composed of
 18 day-to-day non-project related mapping activities to maintain maps,

databases and asset-related records, provide general support of ongoing mapping activities, and respond to internal and external requests for asset information. The electric distribution mapping team follows the records management policies and procedures established by the RIM team in performing their day-to-day activities.

RIM work is composed of activities to support implementing companywide records management policies in Electric Operations (EO); develop EO-specific records management policies, procedures, training and change management programs; and manage specific records management improvement projects. As described in greater detail below, the specific RIM projects are designed to ensure that EO records are traceable, verifiable and complete.

b. Risks Mitigated by Program

EO is using the Enterprise and Operational Risk Management (EORM) Program to manage electric system risks.⁴ A foundational element of the EORM Program is the Electric Operations Risk Register, which includes enterprise risks, asset risks and process risks.

Electric Distribution Mapping and RIM programs are ongoing foundational components of Electric Distribution management, administration, operations, maintenance, and construction activities. Both programs support public and workforce safety, reliability, compliance with regulations, mitigation of asset failure risks, and documentation of asset investment decisions. Both programs also provide necessary records for effective and efficient utility operations.

Failure to maintain accurate maps and current asset data could pose public and workforce safety risks, asset failure risks, or result in disruption in service.

Not having effective Electric Distribution Mapping and RIM programs could impair PG&E's ability to construct, operate and maintain its electric system safely and reliably. In addition, insufficient records management could result in the inability to locate and/or provide timely access to critical documentation during operations, maintenance or

⁴ See Exhibit (PG&E-4), Chapter 2, for description.

1 repair tasks as well as other essential utility activities. This can lead to
2 situations where decisions and actions are based on information that
3 may not be current.

4 PG&E is implementing several controls that will mitigate Electric
5 Distribution Mapping and RIM risks. The controls include the following:

- 6 • Maintaining mapping and asset records in a single, consolidated
7 Electric Distribution Asset Management and Geographic Information
8 System (ED AM/GIS).
- 9 • Performing business process reviews that will develop and address
10 recommendations related to identifying records, record ownership,
11 systems of record, records retention, and compliance requirements.
- 12 • Migrating Vital Records⁵ currently in paper and electronic media to
13 robust electronic system(s) of record.
- 14 • Updating procedures and guidance documents to reflect
15 documentation and record keeping requirements, including records
16 retention and disposition.
- 17 • Developing and conducting training on documentation and record
18 keeping requirements.
- 19 • Standardizing records documentation and storage requirements for
20 historical and Vital Records in paper and electronic formats.
- 21 • Instituting metrics, auditing, quality assurance, quality control, and
22 non-bypassable controls where possible to maintain process
23 improvements.

24 Both the Electric Distribution Mapping and RIM programs were
25 scored at the MWC level, using the Risk Informed Budget Allocation
26 (RIBA) process.⁶ The most common flag used was “Regulatory
27 Compliance.” By performing these projects, PG&E will mitigate the
28 identified risks and, in addition, expects to realize benefits to public and
29 workforce safety, reliability, and customer satisfaction.

5 Records fall into three primary categories: (1) Vital – Records information that is needed during or immediately following a crisis; (2) Important – Records information that is needed to restore operations to a normal state; and (3) Useful – Records information that is useful to uninterrupted operation.

6 See Exhibit (PG&E-2), Chapter 4, testimony and workpapers for further information regarding RIBA and a description of the RIBA flag taxonomy.

c. Management Structure

PG&E currently performs the electric distribution mapping activities with employees working in various local and regional offices across its service area. These employees report to supervisors responsible for specific mapping offices. The supervisors report to PG&E's Mapping and Geographic Information System Services section of the Technology and Information Strategy Department within the Asset Management (AM) organization.

Through 2014, PG&E performed the RIM program activities with one employee in the Technology and Information Strategy Department. In January 2015, PG&E reorganized its EO RIM employees performing work for Electric Distribution, Electric Transmission, Power Generation, and Energy Procurement, consolidating them into the Compliance and Risk Management Department within the AM organization.

d. Key Metrics and Other Performance Measures

The Electric Distribution Mapping program and RIM program support a number of broader EO safety, reliability and affordability metrics, but do not have program specific metrics at this time. For example, achieving desired Wires Down metric performance to support EO's public safety goals relies on accurate maps and records reflecting conductor type, location, date installed and relevant original construction information.

3. 2017 Forecast Drivers

PG&E describes below the major expense drivers to the forecast shown in Figure 16-1. These are listed in order in which they are presented in Figure 16-1, though escalation is not included.

a. Electric Distribution Mapping Program

PG&E's 2017 forecast for the electric distribution mapping work is \$3.5 million, excluding escalation, which is \$0.5 million greater than 2014 recorded costs of \$3 million.⁷ The increase is driven by quality

⁷ See WP 16-6, Line 1, Exhibit (PG&E-4).

1 assurance and ongoing business support costs following completion of
2 the ED AM/GIS project.

3 Non-project related activities in the Electric Distribution Mapping
4 program include, but are not limited to: (1) updating or adding facilities
5 to the ED AM/GIS; (2) updating other electronic databases, such as
6 SAP Asset Registry and Tangible Property Listing (used for franchise
7 tax reporting) with specific equipment information; (3) updating tax
8 codes and city annexation boundaries; (4) supporting business
9 processes such as data quality governance post-ED AM/GIS
10 deployment; and (5) creating new or reconfiguring geographic data that
11 is illegible or does not match conditions in the field. PG&E's forecast for
12 the Electric Distribution Mapping program is \$5.0, \$3.5, and \$3.5 million
13 for 2015, 2016 and 2017, respectively.⁸

14 **b. Records and Information Management (RIM) Program**

15 Electric Operation's RIM team is tasked with implementing PG&E's
16 Enterprise Records and Information Management (ERIM) policies and
17 standards within EO. The EO RIM team will also manage specific
18 records management improvement projects that align with the ERIM
19 program and EO operating goals.

20 Some of the RIM improvement project work forecast in PG&E's
21 2014 General Rate Case (GRC) was rescheduled due to the delayed
22 deployment of two foundational technology projects: (1) PG&E's
23 Enterprise Content Management System – Documentum (D2); and
24 (2) the ED AM/GIS. The scope of the RIM projects identified in the 2014
25 GRC was also adjusted, as described below and in workpapers
26 supporting this chapter, to reflect information learned since the
27 2014 GRC forecasts were developed in 2012.

28 Rescheduling the Convert Paper Records (CPR) and Migrate
29 Electronic Records (MER) projects prevented unnecessary costs to
30 customers. D2 had to be completed and configured before PG&E could
31 begin the CPR and MER projects forecast in the 2014 GRC. Moreover,
32 extensive work was required to establish the D2 system and define

⁸ See WP 16-6, Line 1, Exhibit (PG&E-4).

critical application components so that the systems would be reliable, consistent, and secure, and so that information would be retrievable and accessible. In addition, Electric Distribution needed to develop taxonomy and filing structures so that records could be added into D2 in an efficient and consistent manner. Furthermore, from a records security perspective, roles and access permissions for D2 had to be defined, clarified and made consistent across the enterprise. These definitions and standards are necessary so that electronic records would be described consistently and have the necessary attributes so they could be retrieved easily when needed. Waiting to perform the records improvement work until after the D2 system and structure are in place will avoid duplicative data entry, unnecessary training and change management activities that would have ultimately resulted in higher costs to customers.

The ED AM/GIS project provides the foundational system for recording and managing electric distribution asset data. Completing this project, including all of the required data conversion associated with the project, was necessary before the proposed Field Asset Inventory (FAI) project could begin. Otherwise, it would have been necessary to enter the FAI field-collected information into the multiple databases that exist prior to completion of the ED AM/GIS project completion, creating the potential for increasing inventory costs and introducing errors.

Deployment of the D2 and ED AM/GIS projects will allow the RIM records improvement projects to resume as proposed in this chapter.

1) Records and Information Management (RIM) Labor

PG&E's 2017 forecast for RIM labor is \$1.6 million (excluding escalation). This is a new cost relative to 2014 recorded costs.⁹ In conjunction with the organizational changes made in PG&E's Enterprise Records and Information Management (ERIM) organization in 2015, EO established a dedicated RIM team to support implementing companywide records management policies in EO; develop EO-specific records management policies,

⁹ See WP 16-6, Line 4, Exhibit (PG&E-4).

1 procedures, training programs and change management programs;
2 and manage specific records management improvement projects.
3 The addition of this team provides the focused resources necessary
4 to achieve EO's records management goal of traceable, verifiable
5 and complete records. The specific work done by the EO RIM is
6 new and goes beyond the work historically done in the context of
7 electric distribution mapping activities.

8 **2) Field Asset Inventory (FAI)**

9 PG&E's 2017 forecast for the FAI project is \$4.9 million,
10 excluding escalation, which is \$4.7 million more than 2014 recorded
11 costs of \$0.2 million.¹⁰ The increase is primarily due to ramping up
12 the FAI project work in 2015, which is described further below.

13 The FAI project entails performing a detailed inventory on an
14 estimated 10 percent of electric distribution overhead and
15 underground facilities to add to available asset information and
16 correct discrepancies relative to actual assets in the field and
17 PG&E's asset records in SAP and ED AM/GIS databases. The
18 proposed inventory will occur in a phased manner and is following
19 the ED AM/GIS project deployment and data conversion schedule.

20 FAI is intended to support the accuracy and completeness of
21 asset information, maps and records in ED AM/GIS database.
22 The ED AM/GIS database is the source for critical asset data that is
23 used by two key electric distribution technologies: (1) the
24 Distribution Management System (DMS), described in Exhibit
25 (PG&E-4), Chapter 5,¹¹ and (2) an improved asset risk
26 management analysis tool (System Tool for Asset Risk (STAR)),
27 described in Exhibit (PG&E-4), Chapter 15.¹² Since DMS and
28 STAR both rely on accurate information contained in ED AM/GIS,
29 the FAI project provides broad benefits across EO by improving
30 PG&E's foundational asset data accuracy and completeness.

¹⁰ See WP 16-6, Line 5, Exhibit (PG&E-4).

¹¹ See Exhibit (PG&E-4), Chapter 5, for description.

¹² See Exhibit (PG&E-4), Chapter 15, for description.

The FAI is one of the projects referenced earlier in this chapter that was proposed in PG&E's 2014 GRC but rescheduled due to delayed completion of the ED AM/GIS project. Since preparation of its 2014 GRC forecast in 2012, PG&E also determined the scope for the FAI project should be adjusted to inventory only a portion of its electric distribution assets rather than all electric distribution assets in the system. PG&E believes the reduced FAI project scope will be less costly overall to customers, while still achieving the targeted benefits.

Full scale project execution is expected to begin in 2016 after completion of the ED AM/GIS project, and is expected to continue beyond 2019. PG&E's expense forecast for this project is \$1.0, \$4.6, and \$4.9 million from 2015 to 2017, respectively.¹³

3) Records Management Improvement Projects

PG&E's 2017 forecast for MWC GE does not include costs associated with other records management improvement projects that started in 2014 and are continuing through 2016. Specifically, work that is similar in nature to the CPR, FRI and MER projects described in the 2014 GRC has been folded into PG&E's ERIM program described in Exhibit (PG&E-7), Chapter 8B, and therefore is not reflected in the forecast for this chapter. Information about these project activities and costs are described in workpapers supporting this chapter.¹⁴

4) Business Process Reviews

PG&E has no forecast work for Business Process Reviews in 2017. Recorded costs in this area in 2014 were \$0.1 million, the year in which PG&E completed the work.¹⁵ Business Process Reviews will no longer be conducted as a separate project and the process review work activity has been absorbed into each of the RIM projects: FAI, FRI, CPR and MER.

¹³ See WP 16-8, Lines 1-33, Exhibit (PG&E-4), for forecast details.

¹⁴ See WP 16-9 through WP 16-11, Exhibit (PG&E-4), for details.

¹⁵ See WP 16-6, Line 9, Exhibit (PG&E-4).

c. Forecast Summary

Table 16-1 shows the forecast summary for MWC GE.

TABLE 16-1
MWC GE EXPENSE FORECAST
(THOUSANDS OF NOMINAL DOLLARS)

Line No.	Activity or Initiative	2014 Recorded Adjusted	2015 Forecast	2016 Forecast	2017 Forecast	Workpaper Reference
1	Electric Distribution Mapping Program	\$3,043	\$5,043	\$3,534	\$3,546	WP 16-6, Line 1
2	Records and Information Management Labor		694	1,529	1,582	WP 16-6, Line 4
3	Field Asset Inventory	200	961	4,584	4,927	WP 16-6, Line 5
4	Records Management Improvement Projects	185	1,346	5,206	—	WP 16-6, Lines 6-8
5	Business Process Reviews	110	—	—	—	WP 16-6, Line 9
6	Escalation			\$396	\$541	WP 16-6, Line 10
7	Total	\$3,538	\$8,044	\$15,249	\$10,596	

C. Activities and Costs by MWC

Work in the Electric Distribution Mapping and RIM programs is reflected in MWC GE. PG&E defines this MWC as follows.

Electric Distribution Mapping and Records Information Management (RIM) –

Electric Distribution Mapping includes maintaining maps and asset-related records, providing general support of ongoing mapping activities, and responding to internal and external requests for asset information. RIM manages records management activities and specific records management projects.

PG&E has established two Major Activity Types (MAT) within MWC GE to track the Electric Distribution Mapping (MAT GEO) and RIM (MAT GEP) programs separately.

D. Relationship to Enterprise Records and Information Management (ERIM)

PG&E created an ERIM organization to be responsible for developing the policy, strategy and guidance for records and information management practices for all PG&E departments. The ERIM organization monitors compliance and supports the development of consistent and integrated processes that promote management of information to further PG&E's immediate and future regulatory, legal and operational requirements.

1 **E. Estimating Method**

2 PG&E's 2017 Electric Distribution Mapping and RIM program forecast is
3 based on 2014 recorded expenditures, historical trends, productivity
4 improvements, and project specific cost estimates.

5 The FAI project forecast was based on an estimate provided by contractors
6 who have conducted similar field inventories for other utilities, and PG&E's
7 experience with similar work. The project implementation plan includes a pilot
8 and development of a detailed scope and cost estimate in 2015 prior to
9 launching the full scale inventory.

10 Escalation is calculated using the escalation rates outlined in Exhibit
11 (PG&E-4), Chapter 19.

12 **F. Cost Tables**

13 The expense forecasts for the Electric Distribution Mapping and Records
14 Management Program are summarized in Table 16-2.

TABLE 16-2
EXPENSE
(THOUSANDS OF NOMINAL DOLLARS)

Line No.	MWC	Description	Recorded Adjusted 2010	Recorded Adjusted 2011	Recorded Adjusted 2012	Recorded Adjusted 2013	Recorded Adjusted 2014	Forecast 2015	Forecast 2016	Forecast 2017	Workpaper Reference
1	GE	E Dist Mapping	\$3,477	\$3,364	\$4,302	\$4,324	\$3,538	\$8,044	\$15,249	\$10,596	WP 16-1, Line 1
2		Total	\$3,477	\$3,364	\$4,302	\$4,324	\$3,538	\$8,044	\$15,249	\$10,596	

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Field Asset Inventory Project Summary

Project Title: Field Asset Inventory (FAI)
Major Work Categories: MWC GE
Planning Order Numbers: 5236091
Project Start Date: 2013
Project Completion Date: TBD
Operative Date (only applies to Capital): N/A

Project Description

The FAI project is intended to support the accuracy and completeness of asset information, maps and records in an integrated ED AM/GIS system. The FAI project entails performing a detailed inventory on an estimated 10 percent of electric distribution overhead and underground facilities to add to available asset information and correct discrepancies relative to actual assets in the field and PG&E's asset records in SAP and ED AM/GIS databases. The proposed inventory will occur in a phased manner and is following the ED AM/GIS project deployment and data conversion schedule.

The ED AM/GIS database is the source for critical asset data that is used by two key ED technologies: (1) the Distribution Management System (DMS), described in Exhibit (PG&E-4), Chapter 5¹ and (2) an improved asset risk management analysis tool (System Tool for Asset Risk (STAR)), described in Exhibit (PG&E-4), Chapter 15.² Since DMS and STAR both rely on accurate information contained in ED AM/GIS, the FAI project provides broad benefits across EO by improving PG&E foundational asset data accuracy and completeness.

The FAI is one of the projects proposed in PG&E's 2014 GRC but rescheduled due to delayed completion of the ED AM/GIS project. Since preparation of its 2014 GRC forecast in 2012, PG&E also determined the scope for the FAI project should be adjusted to inventory only a portion of its electric distribution assets rather than all electric distribution assets in the system. PG&E believes the reduced FAI project scope will be less costly overall to customers, while still achieving the targeted benefits.

Full-scale project execution is expected to begin in 2016 after completion of the ED AM/GIS project, and is expected to continue beyond 2019. PG&E's expense forecast for this project is \$1.0, \$4.6, and \$4.9 million from 2015 to 2017, respectively.³

Justification

This project addresses a gap identified in Electric Operations' 2015 Session D Compliance and Risk Program Overview as "processes and control for creating, updating, and retiring asset records." The Session D overview described this gap as follows: EO has not historically had consistent processes and controls for

¹ See Exhibit (PG&E-4), Chapter 5 for project description.

² See Exhibit (PG&E-4), Chapter 15 for project description.

³ See WP 16-8, Exhibit (PG&E-4) for forecast details. B-16

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Field Asset Inventory Project Summary

The Field Asset Inventory project helps mitigate and control records management related risks by correcting the missing, or incorrect records. The FAI project will also identify process gaps and make recommendations to management for improvements.

Cost

The cost estimate for the FAI project is based on data from the ED AM/GIS project that suggests there may be a 10 percent data discrepancy rate, or need to collect additional data, between the ED AM/GIS and SAP systems with actual field conditions. Based on information provided by contractors who have conducted field asset inventories for other companies, PG&E estimates the average unit inventory cost per pole is \$14. PG&E estimates the average unit cost per enclosure is \$250. A minimum inventory of overhead equipment attached to the pole and GPS coordinates (a relative placement of pole with land base information) is proposed to be collected. These estimated unit costs will be validated through the FAI pilot.

A PG&E project management team will be assigned to manage the project with quality assurance and quality control incorporated into the project plan. PG&E will conduct a competitive RFP process to identify a qualified vendor to complete the asset inventory.

Planning efforts started in 2014 and have continued into 2015. Execution of the full project will begin in 2016.

Major Project Spending Estimates
(Thousands of Nominal Dollars)

EXPENSE	2010	2011	2012	2013	2014	2015	2016	2017	
MWC GE	Recorded	Recorded	Recorded	Recorded	Recorded	Forecast	Forecast	Forecast	Reference
Field Asset Inventory	N/A	N/A	N/A	\$ 20	\$ 200	\$ 961	\$ 4,584	\$ 4,927	WP 16-8 and WP 16-14
Expense Total				\$ 20	\$ 200	\$ 961	\$ 4,584	\$ 4,927	

Additional Cost Information:

Please see "Workpaper Table 16-8: MWC GE – Records and Information Management" for specific details regarding the cost assumptions and forecast.

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Field Asset Inventory Project Summary

Benefits

The Field Asset Inventory project is forecast to provide the following benefits:

Primary Benefit Areas	Project Benefits
Public and Employee Safety	<ul style="list-style-type: none"> Improved public safety by improving records accuracy for operations, engineering, asset management, service planning, construction, and maintenance decisions and activities. Improved employee safety by providing accurate information so that operations, maintenance, and construction activities are planned correctly, and appropriate safety equipment is available.
Risk and Compliance	Improved compliance monitoring of maintenance procedures by providing accurate information to be sure appropriate maintenance and inspection activities are implemented at the appropriate time.
Environmental and Social Benefits	Improved construction planning, optimization of construction placement by providing accurate field inventory data for physical landscape attributes.
Reliability	Improved reliability by providing accurate information about equipment in the field to plan and implement operations, design and appropriate equipment maintenance or replacement.

Alternatives Considered

In planning the FAI project, the following two approaches were considered.

1. Perform Inventory in parallel with the ED AM/GIS Regional Deployments:

Pros:

- Had no dependency on ED AM/GIS

Cons:

- Data assessment would be without the benefit of a consolidated data source record
- Multiple data sources would require rigorous manual assessment and reporting
- Results from field verification would need to be populated in multiple systems
- Approach would be error prone and involve heavy manual intervention and business involvement resulting in higher costs

2. Follow EDGIS/AM Project Deployment

Pros:

- Key asset data in digital format in production environment
- Office data cleansing by ED AM/GIS project is complete and data needs or discrepancies for field inventory identified
- Automated and periodic data assessment

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Field Asset Inventory Project Summary**

- Data cleansing progress after updates from field verification can be tracked and reported regularly

Cons

- Dependency on ED AM/GIS data conversion and overall project

Based on the analysis it was determined the best approach is to follow the full ED AM/GIS project deployment and stabilization period to reduce the deployment costs for customers and to minimize the potential for introducing data errors through the inventory process.

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Convert Paper Records Project Summary

Project Title: Convert Paper Records (CPR)
Major Work Category: MWC GE
Planning Order Numbers: 5236115
Project Start Date: 2013
Project Completion Date: TBD
Operative Date (only applies to Capital): N/A

Project Description

The CPR project was introduced in the 2014 GRC. The goal of the project to convert paper-based records into electronic format and store the converted documents in an enterprise document management system remains the same. However, the scope of the project has narrowed to scanning and indexing only Vital Records, beginning with substation drawings and maintenance records. Records fall into three primary categories: (1) Vital – records information that is needed during or immediately following a crisis; (2) Important – records information that is needed to restore operations to a normal state; and (3) Useful – records information that is useful to the uninterrupted operation. After scanning, the records will be indexed based on a set of pre-defined attributes to enable search and retrieval, and facilitate retention management and stored in PG&E's document management system, Documentum (D2).

After further analysis, PG&E has concluded that converting all existing electric distribution as-built job packages as proposed in the 2014 GRC would cost customers more and would not provide sufficient benefit to justify the cost. PG&E will instead inventory, index and ship these records in paper form to PG&E's Corporate Records Center.

Justification

Critical electric distribution records are currently stored in paper format throughout the PG&E territory. This creates the risk that the records may be lost or inaccessible when needed to support operations and compliance requirements. The Convert Paper Records project 1) promotes safety and reliability, and 2) addresses records availability, completeness, and accessibility by converting these paper records to electronic format and stored in the enterprise document management system.

1) Safety and Reliability is supported because consistent records formats, descriptions and storage ensure the most appropriate version is available when needed, and preserves prior versions for historical review. This is essential to operate a reliable electric system and ensure the safety of PG&E employees and the public.

2) Availability, Completeness and Accessibility are addressed. In terms of availability, this project minimizes risks associated with inadequate storage conditions, inability to retrieve information in a timely manner, records stored with individuals rather than in a designated accessible system, records moving with creator/recipient after he/she leaves the business unit, incorrect classification, and descriptions insufficient to identify/retrieve records. In terms of completeness, this project minimizes risks associated with reliance on drafts, non-current versions, and inconsistent or extraneous data sources, e.g. reliance on personal copies rather than a system of record or unofficial work-around processes. In terms of accessibility, the proposed project will improve the ability to retrieve current and historical information through accurate, consistent records descriptions and standardized terminology. In conjunction with other Records and Information Management (RIM) efforts, this

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Convert Paper Records Project Summary

project will designate an official system of record (electronic) for specific records. This will eliminate duplicate filing systems.

The CPR project was identified as work recommended in a Records Management risk assessment completed in July 2014. The specific recommendations related to this project were:

1. Migrate key paper and electronic records to robust electronic system(s) of record.
2. Standardize records documentation and storage requirements for historical and day-forward records in paper and electronic formats

The CPR project addresses the records storage gap described in Electric Operations' 2015 Session D Compliance and Risk Program Overview. The Session D overview described the records storage gap as follows: Electric Operation's current record management storage practices for paper and electronic records are not consistent. Some paper records are stored consistent with the latest industry standards, however others are not. In addition, electronic records are maintained in various systems that require improvements. The indexing, labelling, and ability to retrieve records needs to be improved, systematized, and consistently applied for both paper and electronic records.

Cost

PG&E conducted a CPR pilot in 2015 at PG&E's Applied Technology Services (ATS). Analysis derived from this pilot provided the basis for the forecast and plan. The pilot identified the need to focus on developing a consistent taxonomy and structure, standardize scanning requirements, review vendors, and validate the availability of records already in electronic format. The forecast unit cost is based on the average unit cost for scanning substation drawings and inspection and maintenance records encountered in the pilot.

Major Project Spending Estimates
(Thousands of Nominal Dollars)

EXPENSE	2010	2011	2012	2013	2014	2015	2016	2017	
MWC GE	Recorded	Recorded	Recorded	Recorded	Recorded	Forecast	Forecast	Forecast	Reference
Convert Paper Records	N/A	N/A	N/A	\$ 7	\$ 35	\$ 468	\$ 1,245	\$ -	WP 16-11 and WP 16-23
Expense Total				\$ 7	\$ 35	\$ 468	\$ 1,245	\$ -	

Additional Cost Information:

Please see "Workpaper Table 16-11: MWC GE – Records and Information Management" for specific details regarding the cost assumptions and forecast.

The 2017 forecast for work associated with the CPR project is subsumed within the Enterprise Records and Information Management discussed in Exhibit-7, Chapter 8B..

Benefits

The benefits of the CPR project include:

- Records can be accessed from any location (currently, the records must be obtained by traveling to the local or regional office where the records are stored).

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Convert Paper Records Project Summary

- Records will be properly indexed for future reference - specific attributes based on business needs (e.g., the date a project was completed) will be entered into the records database.
- Records are protected from physical damage or loss resulting from a variety of hazards (fires, floods, earthquakes, etc.) by being electronically stored in secure servers.
- Users access the most recent and complete set of records.

Alternatives Considered

- 1) Scanning and archiving all paper records was initially considered a practical and effective way to reduce paper records storage and implement consistent records management practices. This approach was not selected for the following reasons:
 - Many paper records are copies of records that already exist in electronic format.
 - Many paper records are working papers, drafts or reference materials that may need to be retained for business purposes or regulatory compliance but the official record exists electronically or only the final version would need to be scanned.
 - As business processes and technology becomes more automated and records are born digital, the volume of paper records will decrease. Creating new electronic systems and business processes is a better investment than simply scanning all accumulated paper records.
- 2) The proposed approach is to establish a robust electronic record keeping system, such as the electronic document management system Documentum (D2), and identify what record types should be scanned and ingested into D2. This would preserve and make accessible essential current and historic records for which there is a business, regulatory or historical justification for retaining these vital records.

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 16, ELECTRIC DISTRIBUTION MAPPING AND RECORDS MANAGEMENT
Migrate Electronic Records Project Summary

Project Title: Migrate Electronic Records
Major Work Category: MWC GE
Planning Order Numbers: 5236114
Project Start Date: 2016
Project Completion Date: TBD
Operative Date (only applies to Capital): N/A

Project Description

The Migrate Electronic Records (MER) project entails electronically moving existing electronic records from PG&E legacy databases into an enterprise-wide, industry standard database using consistent indexing with updated search and record retention capabilities. The primary enterprise-wide repository for electronic information is Documentum (D2).

The priority effort for Electric Distribution is to move the Engineering Library System (ELS) and other Vital Records to D2. Records fall into three primary categories: (1) Vital – records information that is needed during or immediately following a crisis; (2) Important – records information that is needed to restore operations to a normal state; and (3) Useful – records information that is useful to the uninterrupted operation. The ELS is an enterprise-wide electronic database that contains various drawings and records. Beginning in 2016, Vital Records stored in the ELS will be validated and data attributes standardized in preparation for moving to D2. In addition to the ELS, other legacy systems containing similar records will be incorporated into D2 to create a single system of record in the future. This will ensure the most current record is protected and accessible when needed.

The Migrate Electronic Records (MER) project was proposed in PG&E's 2014 GRC. MER was delayed to allow for completion of the Documentum (D2) deployment and implementation of common standards, taxonomy and procedures for the migration of vital records.

Justification

Critical electric distribution records are currently stored in electronic systems across multiple platforms and databases. This limits access to and efficient management of these records. MER entails upgrading records already in electronic format to a secure, controlled enterprise-wide system. The MER project promotes safety and reliability, addresses records availability, completeness, and accessibility.

1) Safety and Reliability

Consistent records formats, descriptions and storage ensure the most appropriate version is available when needed, while also preserving prior versions for historical review. This is essential to operating a reliable electric system and ensuring the safety of PG&E employees and the public.

2) Availability, Completeness and Accessibility

In terms of availability, this project minimizes risks associated with inadequate electronic storage conditions, inability to retrieve information in a timely manner, records stored with individuals rather than in a designated accessible system, records moving with creator/recipient after he/she leaves the business unit, and incorrect classification and descriptions insufficient to identify/retrieve records.

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 16, ELECTRIC DISTRIBUTION MAPPING AND RECORDS MANAGEMENT
Migrate Electronic Records Project Summary

In terms of completeness, this project minimizes risks associated with reliance on drafts, non-current versions, and inconsistent or extraneous data sources, e.g. reliance on personal copies rather than a system of record or unofficial work-around processes.

In terms of accessibility, the benefits include increased retrievability of all current and historical information through accurate, consistent descriptions and standardized terminology, and enhanced system search capabilities. In conjunction with other Records and Information Management (RIM) efforts, this project will designate an official system of record (paper or electronic) for specific records. This will eliminate duplicate filing systems.

The MER project was identified as work recommended in a Records Management risk assessment completed in July 2014. The specific recommendations related to this project were:

- Migrate key paper and electronic records to robust electronic system(s) of record
- Standardize records documentation and storage requirements for historical and day-forward records in paper and electronic formats

This project addresses the records storage gap described in Electric Operations' 2015 Session D Compliance and Risk Program Overview. The Session D overview described the Records Storage gap as follows: EO's current record management storage practices for paper and electronic records are not consistent. Some paper records are stored consistent with the latest industry standards, however others are not. In addition, electronic records are maintained in various systems that require improvements. The indexing, labelling, and ability to retrieve records needs to be improved, systematized, and consistently applied for both paper and electronic records.

Cost

The cost estimates for migrating electronic records from existing software platforms are based on a pilot conducted in 2015 for Transmission underground drawings and maintenance records. PG&E used this pilot as the basis for forecasting the cost for the ELS migration.

Major Project Spending Estimates
(Thousands of Nominal Dollars)

EXPENSE	2010	2011	2012	2013	2014	2015	2016	2017	
MWC GE	Recorded	Recorded	Recorded	Recorded	Recorded	Forecast	Forecast	Forecast	Reference
Migrate Electronic Records	N/A	N/A	N/A	N/A	N/A	\$ -	\$ 3,002	\$ -	WP 16-12 and WP 16-27
Expense Total						\$ -	\$ 3,002	\$ -	

Additional Cost Information:

Please see "Workpaper Table 16-12: MWC GE – Records and Information Management" for specific details regarding the cost assumptions and forecast.

The 2017 forecast for work associated with MER project is subsumed within the Enterprise Records and Information Management discussed in Exhibit-7, Chapter 8B.

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 16, ELECTRIC DISTRIBUTION MAPPING AND RECORDS MANAGEMENT
Migrate Electronic Records Project Summary

Benefits

The benefits associated with migrating electronic records and filing the records in a standardized Company-wide database are:

- Search functions and other improved ability to access the specific reference documents or procedure required in the office and in the field via mobile device
- Greater records availability through a modern, vendor supported database that assures continued access to a broader set of users who may not have access to the current databases or who cannot easily find the records needed.
- Implementation of appropriate records retention policies to assure required records are retained and outdated or unnecessary records are discarded to avoid confusion.
- Improved public and employee safety through consistent and ready access to critical asset records, as well as secure customer and employee personal and protected information.
- Improved compliance documentation through easy access to asset and maintenance records.

Alternatives Considered

1. Perform the project as planned in GRC 2014. This approach was not selected due to the dependency on the foundational technology project deployment of Documentum (D2). Extensive work was required to establish the D2 system and define critical application components so that the system would be reliable, consistent, secure, and so that information would be retrievable and accessible. Delaying MER until the D2 system and structure are in place will avoid duplicative data entry, unnecessary training and change management activities that would have ultimately resulted in higher costs to customers.
2. In completion of the D2 deployment, implement the MER project. Given the cost and time required to consolidate information from multiple systems, validate current records, and standardize terminology and indexing attributes, Vital Records from the Engineering Library System (ELS) have been prioritized to be migrated first.

**PG&E's ATTACHMENT IN RESPONSE TO SUBPARTS B AND C OF ENERGY DIVISION STAFF
DATA REQUEST 2 QUESTIONS 1 THROUGH 20 (EXCEPT FOR QUESTION 17)**

SUBPARTS B AND C

- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER TO SUBPARTS B AND C: GENERAL RESPONSE

- b) As discussed in Chapter 4 of Exhibit (PG&E-2) in the 2017 GRC opening testimony, "Integrated Planning Process" (attachment GRC-2017-PhI_DR_ED_002-Q01Atch04), since 2014, PG&E's planning and budgeting process (Integrated Planning) has consisted of interconnected sessions in which PG&E annually:
 - 1) identifies its strategic areas of focus for the next 5 years (Executive Guidance);
 - 2) reviews and discusses the top risks for the Company and associated risk reduction and mitigation strategies (Session D);
 - 3) develops its 5-year line of business operating plan, goals and strategies, including risk management (S-1); and
 - 4) develops its 2-year detailed work plan, with targeted metric outcomes and financial prioritization of proposed work (S-2).

The RIBA process provides a framework for making risk-informed budget decisions and follows the Integrated Planning process.

As noted on page 4-7 of attachment GRC-2017-PhI_DR_ED_002-Q01Atch04:

"Throughout the year, the LOBs may identify emerging issues or work items that were not in the original plans developed through the Integrated Planning process from the prior year. These emerging issues often require the reevaluation of the LOB work portfolios and may result in a reprioritization effort, either within the individual LOB or at the enterprise level, to ensure the emerging issues are addressed. The Company is generally provided discretion regarding the use of California Public Utilities Commission-approved funds and is expected to manage that funding in accordance with changing business and customer needs."

Summarized below are the significant drivers between the 2014 budgeted and recorded costs as provided in the March 30, 2015 Budget Compliance Report. Additionally, below are references to PG&E's Gas Distribution Pipeline Safety

Report, No. 2015-02,¹ describing significant drivers between the 2014 GRC decision allocation and recorded costs.

Gas Distribution – The Gas Distribution organization overspent its 2014 expense budget by \$31.1 million or 8.2 percent. The increase was primarily driven by work resulting from the Napa Earthquake; higher-than-planned spending on corrective maintenance activities repairing mains, services and valves; as well as leak survey and repair and atmospheric corrosion inspection costs above plan. These increases were partially offset by: lower-than-planned volumes of locate and mark activities and cathodic protection resurvey units; and a reduction in maintenance on flow meters, remote terminal units, and electronic recorders. Gas Distribution underspent its 2014 capital budget by \$14.0 million or 2.4 percent. The decrease was primarily driven by lower-than-planned replacement projects and delays with the Gas Operations Technical Training Center and the Hot Back Up Center facility. The decrease was partially offset by increases in work requested by third parties or governmental agencies.

Variance explanations between the 2014 GRC decision allocations and actual costs are included in PG&E's Gas Distribution Pipeline Safety Report, No. 2014-02, Reporting Period July 1 – December 31, 2014, in Compliance with CPUC D. 11-05-018:

Reference	Description
Section 1: Decision Making Overview, Key Drivers of Modifications, pages 9-12	Describes key drivers of modifications for the following programs: Service Replacement, Normal Operating Plan, Copper Service, Main Replacement, Valve Replacement, High-Pressure Regulator, Emergency Zone Valve, Regulatory Replacements, and Gas Distribution Control Operations Assets
Section 12: Variance Explanations Between Decision Allocations and Actual Spending Request, Tables 12-1 and 12-2	Tables provide variance explanations between the 2014 GRC decision allocations, and actuals for expense and capital MWCs included in the Gas Distribution Pipeline Safety Report

Electric Distribution – The Electric Distribution organization overspent its 2014 expense budget by \$17.0 million or 2.7 percent. The primary drivers were higher-than-planned spending on: overhead and underground preventive maintenance, including work to correct surge arrestor grounding; and operation and maintenance of substations. The increase was offset, in part, by lower-than-planned spending for corrective maintenance. Electric Distribution underspent its 2014 capital budget by \$52.4 million or 3.4 percent. The decrease was primarily due to rescheduling of Rule 20A projects, delays in projects requested by third parties or governmental agencies, three Bay Area switchgear replacements rescheduled to 2015, and lower-than-planned asset replacements. The decrease was partially offset by higher spending on pole replacement projects, substation Supervisory Control and Data Acquisition (SCADA), and routine emergency recovery.

¹ This report was sent to Mr. Edward Randolph, Director of the Energy Division, on March 30, 2015.

Summarized below are the significant drivers between the 2015 budgeted and recorded costs as provided in the March 31, 2016 Budget Compliance Report. Additionally, below are references to PG&E's Gas Distribution Pipeline Safety Report, No. 2015-02,² describing significant drivers between the 2014 GRC decision allocation and recorded costs.

Gas Distribution – The Gas Distribution organization overspent its 2015 expense budget by \$36.9 million or 9.2 percent. The increase was primarily driven by an increase in headcount and work activities to support the Enterprise Records and Information Management program and Enterprise Corrective Action Program. The increase was also due to higher spending to respond to gas leaks and emergencies, as well as additional locate and mark activities. The increase was partially offset by delays in IT projects. Gas Distribution underspent its 2015 capital budget by \$44.1 million or 6.0 percent. The decrease was primarily driven by leak repairs that were less-than-expected given leak find rates lower-than-forecast, reductions in the number of district regulator rebuilds, and a lower volume of residential and non-residential connection activities.

Variance explanations between the 2014 GRC decision allocations and actual costs are included in PG&E's Gas Distribution Pipeline Safety Report, No. 2015-02, Reporting Period July 1 – December 31, 2015, in Compliance with CPUC D. 11-05-018:

Reference	Description
Section 10: 2014 GRC Forecast Capital Project Status Request, pages 58-60	Describes major variances for the following programs: Replacement Program, Reliability Program, High-Pressure Regulator, Capacity, and Gas Distribution Control Operations Assets
Section 12: Variance Explanations Between Decision Allocations and Actual Spending Request, Tables 12-1 and 12-2	Tables provide variance explanations between the 2014 GRC decision allocations, and actuals for expense and capital MWCs included in the Gas Distribution Pipeline Safety Report

Electric Distribution – The Electric Distribution organization overspent its 2015 expense budget by \$101.4 million or 15.3 percent. The primary driver was higher spending on major emergencies due to severe weather events and wildfires. Additional increases were related to overhead and underground maintenance work, and increased volume of customer requests for field service and new business. The increases were offset, in part, by lower-than-planned spending for the pole intrusive inspection program. Electric Distribution overspent its 2015 capital budget by \$27.9 million or 1.8 percent. The increase was primarily due to higher spending on major

² This report was sent to Mr. Edward Randolph, Director of the Energy Division, on March 30, 2016.

emergencies, substation capacity projects, and substation emergency equipment replacements. The increase was partially offset by third-party delays and re-scoping associated with Rule 20A projects, underground asset and base reliability replacement projects that were rescheduled to 2016, and lower-than-planned spending on substation switchgear projects.

- c) PG&E did not rely upon any specific Commission orders in prioritizing spending, but rather relied upon general Commission precedent concerning forecast ratemaking. In general, Commission decisions in rate cases do not establish budgets, but instead establish revenue requirements within which utilities have discretion to establish budgets. As the Commission explained in D.11-05-018 (page 27): “It is generally recognized that when a utility files a GRC, expenditure estimates are based on plans and preliminary budgets developed at least two years in advance of when they will actually be incurred. When the utility finalizes its budget just prior to the year when costs will be incurred or adjusts the budget during the year, new programs or projects may come up, others may be cancelled, and there may be reprioritization. This process is expected and is necessary for the utility to manage its operations in a safe and reliable manner.” Consistent with this precedent, PG&E establishes annual budgets using its Integrated Planning process, as described in Chapter 4 of Exhibit (PG&E-2) (attachment GRC-2017-PhI_DR_ED_002-Q01Atch04). PG&E described its 2014 and 2015 budgets and 2014 and 2015 spending in its annual Budget Compliance reports, as discussed in subpart “b” above.

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 4
INTEGRATED PLANNING PROCESS

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 4
INTEGRATED PLANNING PROCESS

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PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 4
INTEGRATED PLANNING PROCESS

A. Introduction

The purpose of this chapter is to describe Pacific Gas and Electric Company's (PG&E or the Company) enterprise-wide integrated planning and budgeting process. In this chapter, PG&E also describes how risk management through integrated planning forms the foundation of system safety and compliance projects and programs forecast in its 2017 General Rate Case (GRC).

B. Overview of PG&E's Integrated Planning Process

PG&E's planning and budgeting process (Integrated Planning) consists of interconnected sessions that together form the blueprint of how PG&E will deliver on its most important strategic initiatives.

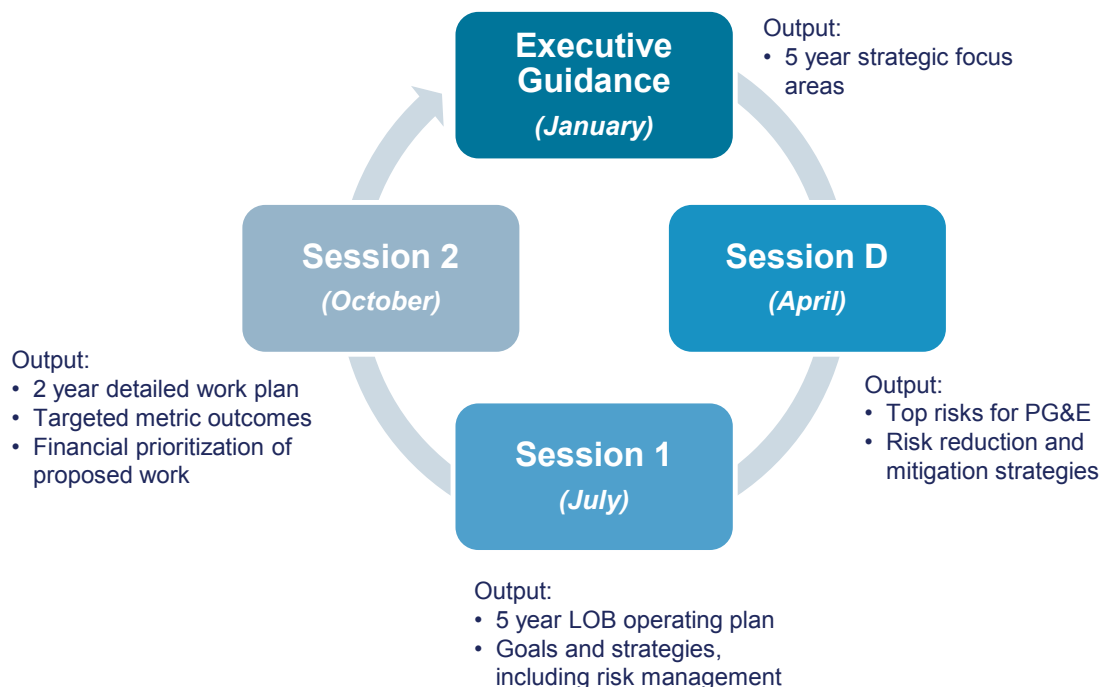
The first session in the Integrated Planning process is the Executive Guidance forum in January. The outputs from the Executive Guidance forum are the strategic focus areas for the next 5-year planning horizon. These strategic focus areas underpin the individual projects and programs that PG&E's lines of business (LOBs) will develop and implement in following sessions of the Integrated Planning process.

The next three sessions in the Integrated Planning process are known as Session D, Session 1 (S-1) and Session 2 (S-2). These three sessions drive the development and implementation of: the Line of Business (LOB) Risk and Compliance Mitigation plan (Session D); 5-year Operating plan (S-1); and 2-year Execution plan (S-2).¹

Figure 4-1 below illustrates the Integrated Planning process cycle and the key outputs of each session of the process.

¹ A fifth session, Session C, is focused on the Company's senior leadership development and succession planning. As Session C's focus is outside of the Company's core work planning and budgeting process, Session C is not discussed in this testimony.

**FIGURE 4-1
INTEGRATED PLANNING PROCESS**



To better prepare for its 2017 GRC filing, the Integrated Planning team began working with the Company's GRC project management team in 2014 to more fully coordinate the Integrated Planning and GRC planning processes. Under my leadership, the Integrated Planning team has responsibility for developing, communicating, and managing the execution of the Company's overall Integrated Planning process and is comprised of individuals within PG&E's Finance organization. Starting in 2014, guidelines issued from the Integrated Planning team clearly articulate that the information flowing from Integrated Planning would form the basis for subsequent GRC filings.

C. Risk Management Through Integrated Planning

Since the 2014 GRC, PG&E has continued to improve Integrated Planning to better incorporate safety and risk mitigation into all elements of the planning process and to use risk-informed planning to form the basis for the portfolio of work it ultimately includes in its rate case filings. Key improvements to Integrated Planning include enhancements to Executive Guidance and Session D, tighter linkage of Session D to S-1 and S-2 using a Risk-Informed Budget Allocation (RIBA) framework for evaluating spending decisions within the

core operational LOBs, and better integration of the Integrated Planning outputs and the development of the GRC forecasts.

1. Executive Guidance

The initial step in the annual planning and budgeting process is the Executive Guidance forum in January of each year, where the Company's Chief Executive Officer (CEO) meets with the senior officer team to communicate and issue the Company's strategic areas of focus for the next 5-year planning horizon. Executive Guidance for 2016-2020 centered on three areas:

- 1) Deliver Operational Excellence – consistently improve the safety and reliability of our gas and electric services.
- 2) Be the Provider of Choice – deliver affordable gas and electricity with industry leading customer service.
- 3) Position PG&E for the Future – innovate and design utility systems, creating customer and shareholder value.

PG&E's Executive Guidance directs the business to continue to advance the use of a data-driven risk management framework as the foundation for establishing business priorities. The Integrated Planning process follows this guidance by incorporating risk mitigation planning and risk-informed budgeting into each of the work planning and estimating processes that ultimately inform budgets and the GRC forecast.

Executive Guidance outlines specific actions that the Company must take to support the Company's safety, reliability, and affordability goals. The Integrated Planning process translates the Company's Executive Guidance into meaningful 5-year integrated plans for all PG&E LOBs and ensures that diligence and rigor are applied to planning and spending decisions.

The GRC project management team participated in the Executive Guidance forum in both January 2014 and January 2015 and provided the Company's senior leadership team with information about the strategic direction for the 2017 GRC filing. The GRC team's participation in the Executive Guidance forum was a first step in strengthening the alignment between Integrated Planning and the work ultimately included in the GRC filing.

2. Session D

During Session D, PG&E's senior leadership reviews and discusses the top risks for the Company. PG&E's Chief Risk Officer and Chief Ethics and Compliance Officer jointly lead the risk and compliance sections of Session D. The risks discussed during Session D include not only enterprise and operational risks but compliance risks as well. At the annual Session D meeting, senior officers discuss: (1) the top risks for the Company and for each LOB; (2) risk reduction or mitigation progress to date; (3) strategies to manage any risk mitigation challenges; (4) future risk management plans; and (5) areas where collaboration across LOBs or additional resources may be required to manage risk. The information collected in Session D informs PG&E's strategy and execution plans that are developed in Sessions 1 and 2 and that ultimately form the basis of PG&E's GRC forecast.

Since the 2014 GRC filing, PG&E has enhanced Session D by requiring that the Company's top risks and any risk mitigation gaps identified in Session D must be fully addressed in the operational plans put forth in the subsequent S-1 and S-2 submissions.

3. Session 1 and Session 2

Following Session D, each LOB develops its 5-year operating plan, also known as its S-1 submission, describing the actions required to achieve the Company's and the LOB's strategic goals. In the S-1 submission, the LOBs must identify their top operational and compliance risks and describe how the strategic plans included in S-1 address the risks and compliance items identified in Session D. S-1 requires each LOB to identify: (1) anticipated funding levels for mitigating or managing each top risk; (2) an estimate of how the risk status will change over time as mitigation and management initiatives are implemented; and (3) a metric for assessing progress in addressing the risk.

At the S-1 meetings in July, the Company's CEO and senior officers from every LOB meet to discuss and understand each other's goals, strategies, and priorities. At the completion of the S-1 meetings, the Company's leaders agree on the strategic plans and the estimated funding for each LOB to achieve the Company's strategic goals. The work

conducted during the S-1 process furthers the focus on risk and compliance that started with Executive Guidance and continued in Session D. Just as the Session D output informs the S-1 submission, the S-1 output directly informs the detailed work plans the LOBs will develop for S-2 and that will ultimately support the projects and programs included in the GRC filing.

Following Session 1, each LOB engages in the Session 2 process to develop a detailed 2-year work plan defining how it will execute on the goals, strategies, and priorities agreed upon during the S-1 process. The S-2 submission includes targeted performance outcomes for the proposed work plan, and each LOB also provides an analysis showing how its overall risk profile will change year over year as it implements its work plan. The LOB S-2 risk analysis identifies specific effectiveness targets and response plans to mitigate each top risk identified in Session D and Session 1. The risk and compliance effort from Session D, the strategic plans developed in S-1, and the execution plans developed in Session 2 are used by the LOB as an input into the upcoming GRC planning and forecasting process.

As part of the S-2 process, the LOBs start with the funding recommendations from the S-1 financial prioritization meeting and build a detailed work plan for their programs and projects for the following two years. The LOB leadership team will review, revise, and finalize the prioritized work plan and associated funding needs for its LOB.

The senior officers attend an S-2 financial prioritization meeting, where they discuss how changes since S-1 have impacted work plans and funding requests. The objective of the S-2 financial prioritization meeting is a final set of work and budget targets for each LOB for the coming year.

The Company's CEO and senior officers from every LOB meet collectively during the S-2 meetings in October or November to discuss each LOB's execution plan, align on performance metrics, and ultimately approve budgets for the following year for each LOB.

4. Prioritization and Risk Informed Budget Allocation

In 2014, PG&E introduced a new RIBA framework to evaluate and prioritize the work portfolios for the core operational LOBs: Electric

1 Operations, Gas Operations, Power Generation, and Nuclear Generation.^{2,3}
2 The RIBA process informs the prioritization of budgets for risk mitigation,
3 compliance requirements, and other work in the LOB portfolio.

4 The RIBA process provides a framework for making risk-informed
5 budget decisions and follows the Integrated Planning process. The RIBA
6 process starts after the conclusion of Session D when the LOBs develop a
7 list of proposed projects to address risks, compliance requirements, and
8 strategic goals. Each of the projects on the list is scored by the LOB, with
9 input from engineers, asset owners, program managers, and other
10 stakeholders. The scoring methodology considers the project's impact on
11 safety, reliability, and the environment and also considers mandatory work,
12 compliance requirements, external commitments, and the interrelationship
13 among projects. The output from the initial RIBA scoring supports the
14 materials developed by each LOB for Session 1.

15 As part of Session 1, as the Vice President (VP) of Business Finance,
16 I facilitate a financial prioritization meeting with the senior officers from every
17 LOB. We discuss the funding requests for each LOB, the approach each
18 LOB took to arrive at its prioritized list of work, and the LOB's RIBA scored
19 portfolio. The objectives of the S-1 financial prioritization meeting are to
20 confirm the final set of strategic initiatives and funding recommendations for
21 PG&E and for each LOB for the following five years.

22 Following Session 1, the LOBs often adjust the RIBA output to reflect
23 information collected during the S-1 process, and the revised RIBA scoring
24 is used as an input to the S-2 discussions. At the conclusion of Session 2,
25 the final RIBA output is a risk-scored portfolio of work that each LOB uses to
26 inform its rate case forecasts and execution plans. To support both the S-1
27 and S-2 processes, the RIBA scores are calibrated across LOBs to drive

2 PG&E presents additional information about RIBA in its Safety Model Assessment proceeding (A.15-05-003), Chapter 3 and in workpapers supporting this chapter.

3 PG&E relies on its historic prioritization methodology for the Company's support LOBs: Customer Care, Shared Services, Information Technology, and Corporate Services departments. The methodology used for the support organizations focuses on the risk of not funding work and the impact the proposed work has on the LOB's strategic priorities.

consistency in scoring. Additionally, projects may be rescored to reflect changes in risk profiles, compliance requirements, or business priorities.

Using the RIBA process and RIBA output to develop annual budgets and detailed work plans helps to ensure that the projects having the greatest impact on system safety and reliability are included in the portfolio of work put forth by the core operating LOBs. Aligning the RIBA process with the Integrated Planning process ensures that the outputs from the RIBA process reflect the risk management and compliance requirements identified in Session D. Ultimately, risk management is used to build and evaluate the portfolio of work included in the Integrated Planning submissions, and those submissions eventually form the basis for the work included in the LOB GRC forecasts.

PG&E will look for opportunities to continue to improve its Integrated Planning process. One area for improvement will be to further strengthen the link between Session D and Session 1 by refining the RIBA model. To further strengthen this link and align with PG&E's go-forward enterprise risk strategy, the RIBA team will work closely with the Enterprise and Operational Risk Management (EORM) team to assure that improvements contemplated to be made in the EORM program are incorporated into the RIBA process. These types of improvements include increased risk quantification, determination of risk reduction values, and grouping of projects by Session D risk.

D. Reprioritization and Reserve Fund

Throughout the year, the LOBs may identify emerging issues or work items that were not in the original plans developed through the Integrated Planning process from the prior year. These emerging issues often require the reevaluation of the LOB work portfolios and may result in a reprioritization effort, either within the individual LOB or at the enterprise level, to ensure the emerging issues are addressed. The Company is generally provided discretion regarding the use of California Public Utilities Commission-approved funds and is expected to manage that funding in accordance with changing business and customer needs.

The Company sets aside a reserve to address emerging issues during the year that may require a timely and flexible response outside of the standard

1 Integrated Planning process. This reserve fund provides the Company's
2 management with flexibility in dealing with unplanned items. The process of
3 approving and releasing reserve funds is overseen by the Company's Financial
4 Plan Committee (FPC), which is comprised of the Utility Presidents, Senior VP
5 and Chief Financial Officer, and VP of Business Finance. The FPC holds a
6 monthly meeting with the senior management of any LOB requesting reserve
7 funding to review, discuss, and approve the requests. Reserve funds are fully
8 allocated in the current year and are not carried over to the following years.

9 For 2017, costs to operate the business are presented in the respective
10 GRC forecast for each LOB. As a result, there is no separately identified
11 reserve fund for the Company in PG&E's 2017 GRC forecast.

12 **E. Conclusion**

13 PG&E's Integrated Planning process is a robust framework used to
14 incorporate risk management into planning and funding decisions. The current
15 process includes risk-informed prioritization and budgeting for individual projects
16 and programs that ultimately are the basis for PG&E's GRC forecasts.

PACIFIC GAS AND ELECTRIC COMPANY
2017 General Rate Case Phase I
Application 15-09-001
Data Response

PG&E Data Request No.:	ED_002-Q02		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q02		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 2

Electric Distribution Expense – For the program Technology please provide the following:

- a) A narrative explanation as to the reason that 2014 and 2015 expense was approximately \$6.671 and \$5.756 million respectively below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 2

- a) For both 2014 and 2015, technology expense expenditures (MWC JV) were below authorized levels due to the strategic rescheduling of several key Mobile projects in an effort to leverage foundational fixes that were expected to be delivered by the Enterprise Mobile Platform solution in 2015 and are currently underway in 2016. In addition, solutions that were originally planned to be delivered with significant expense requirements (Customer Connection Online) were approved to accelerate work into 2013 and capitalize the remainder of the effort in 2014. Finally, due to the rigorous technology prioritization process initiated in Q4 of 2014, projects started much later than originally planned.
- b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.
- c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

PACIFIC GAS AND ELECTRIC COMPANY
2017 General Rate Case Phase I
Application 15-09-001
Data Response

PG&E Data Request No.:	ED_002-Q03		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q03		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 3

Electric Distribution Expense – For the program Patrol and Inspections please provide the following:

- a) A narrative explanation as to the reason that 2014 and 2015 expense was approximately \$10.264 and \$3.690 million respectively above authorized levels.
- b) Were the additional funds allocated for this program reprioritized from elsewhere? If so where were the funds moved from?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 3

- a) 2014 and 2015 expense spend for the Patrol and Inspections program (MWC BF) was approximately \$10.264 and \$3.690 million above authorized levels due to the following:
 - Increase in the volume of patrol and inspection units from new asset installations in the field and urban/rural plat map updates. Maintenance plans within SAP were updated to account for newly installed assets and to ensure maps were on the appropriate annual/biennial patrol cycle.
 - Change in the frequency of wildfire patrols and inspections in defined Urban Wildfire (UWF), Other Wildfire (OWF), and Santa Barbara country wildfire areas in order to help mitigate wildfire-related risk. The 2014 GRC forecast assumed an annual patrol of the overhead facilities in the UWF and OWF defined areas. PG&E changed the requirement to instead annually perform a detailed inspection to help mitigate the known fire risk due to drought conditions. In addition, in 2013 PG&E changed all plat maps within the Santa Barbara county to an Urban designation, thus requiring at minimum an annual patrol.
 - Higher unit costs due to changes in resource mix of internal and external inspectors, an increase in internal standard rates, an increased focus on quality and consistency of work across divisions, and an increase in performing minor maintenance work during inspections. Performing minor maintenance during an overhead or underground inspection is an overall cost savings for PG&E as it reduces the need to send out a crew on a separate trip to complete the

maintenance; the cost to complete the maintenance is included in the inspection unit cost.

- Additional work identified and performed to support asset strategy identified projects and improved reliability. This work includes an increased focus on reliability through infrared inspections, collection of splice inventory data, infrared inspections in the Urban and Other Wildfire areas, a pilot for non-wood streetlight inspections, and an increase in post-outage review patrols to identify equipment issues.

b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_002-Q04		
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Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 4

Electric Distribution Expense – For the program Corrective Maintenance please provide the following:

- a) A narrative explanation as to the reason that 2014 and 2015 expense was approximately \$9.126 and \$9.446 million respectively above authorized levels.
- b) Were the additional funds allocated for this program reprioritized from elsewhere? If so where were the funds moved from?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 4

- a) The 2014 and 2015 expenses for the Corrective Maintenance Program (MWC BH) were approximately \$9.126 million and \$9.446 million, respectively, above authorized levels due to an increase in the volume of routine emergencies in those years. Routine emergency work is driven by many unpredictable factors such as weather events that do not meet major emergency criteria, third-party damage to PG&E facilities, and any unplanned outage activities.
- b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.
- c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_002-Q15		
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Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 15

Gas Distribution Expense – For the program Gas Distribution Preventive Maintenance please provide the following:

- a) A narrative explanation as to the reason that 2014 and 2015 expense was approximately \$10.223 and \$11.519 million respectively below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 15

- a) The 2014 and 2015 underspend amounts shown in Question 15 appear to have been erroneously calculated. The correct 2014 authorized-to-actual spending is \$10.168 million based on the difference of \$28.210 million authorized and \$18.043 million recorded spending. For 2015, the authorized amount for MWC FH is \$28.891 million and PG&E spent \$16.691 million for a difference of \$12.2 million. The 2015 decision allocation amount is included in PG&E's Gas Distribution Pipeline Safety Report, No. 2015-02, Reporting Period July 1 – December 31, 2015, p. 63, Table 12-1. This report was sent to Mr. Edward Randolph, Director of the Energy Division, on March 30, 2016.

The correct underspend amounts in MWC FH for 2014 and 2015 are summarized in the table below in thousands of dollars.

Year	Actual (A)	Decision Allocation (B)	Delta (A-B)
2014	\$18,043	\$28,210	(\$10,168)
2015	\$16,691	\$28,891	(\$12,200)

As noted in the response provided in GRC-2017-PhI_DR_ED_001-Q01Atch01, the main reason for the difference in MWC FH was that work originally proposed in MAT FHK (Atmospheric Corrosion Meter Inspections) in the 2014 GRC was

subsequently moved to MAT FIQ and MWC JU. This change was made when the Gas Leak Survey and Repair Balancing Account (GLSRBA) was established in 2014. To consolidate all GLSRBA work into one MWC, MAT FHK was moved to MAT FIQ/MWC JU. The amount of spending for Atmospheric Corrosion Meter Inspections in MAT FIQ and JU# is shown on the table below in thousands of dollars:

MAT	MAT Description	2014 Actuals	2015 Actuals
FIQ	Atmospheric Corrosion Monitoring	\$4,738	\$4,737
JU#	Gas Atmospheric Corrosion above balancing account cost cap (FIQ)	\$14,828	\$8,540
Total Amounts Removed from MWC FH		\$19,566	\$13,277

When the movement of dollars from MWC FH to MWCs FI and JU are accounted for, PG&E actually spent more than authorized in 2014 and 2015 for gas distribution preventive maintenance.

- b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.
- c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_002-Q16		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q16		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 16

Gas Distribution Expense – For the program Gas Distribution Mapping please provide the following:

- a) A narrative explanation as to the reason that 2014 and 2015 expense was approximately \$9.803 and \$8.234 million respectively below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 16

- a) The 2014 and 2015 underspend amounts shown in Question 16 appear to have been erroneously calculated. The approximately \$9.8 million 2014 underspend appears to have been calculated using the 2014 forecast amount instead of the 2014 decision allocation amount. The approximately \$8.2 million 2015 underspend amount appears to have been calculated using the 2014 decision allocation amount instead of the 2015 decision allocation amount. The 2015 decision allocation amount was not included in GRC-2017-PhI_DR_ED_001-Q01Atch01, but it is included in PG&E's 2015 Gas Distribution Pipeline Safety Report, No. 2015-02, Reporting Period July 1 – December 31, 2015, p. 63, Table 12-1. This report was sent to Mr. Edward Randolph, Director of the Energy Division, on March 30, 2016.

The correct underspend amounts for 2014 and 2015 are approximately \$8.4 million and \$8.7 million, respectively, as shown in the table below in thousands of dollars.

(Thousands of Nominal Dollars)

Year	Actual (A)	Decision Allocation (B)	Delta (A-B)
2014	\$6,396	\$14,800	(\$8,404)
2015	\$6,566	\$15,278	(\$8,712)

For the 2014 GRC Final Decision authorized \$14.8 million in 2014 and \$15.278 million in 2015 expense funding for Gas Distribution Mapping MWC GF, PG&E had requested \$14.1 million in each of those years to fund the Mapping Records Collection project under MWC GF. That project was delayed in 2014 and to start 2015 due primarily to interdependencies with the ongoing Pathfinder project, and was subsequently moved under Maintain IT Apps and Infrastructure MWC JV where it was renamed the As-Built Records Consolidation project.

The scanning and consolidation of the As-Built records will provide visibility and access to As-Built records and data, ultimately through Pathfinder GIS. Although the scanning activities are not interdependent with the Pathfinder project, the coding and attribution requirements of the records in scope for the As-Built Records Consolidation project have dependencies on the Pathfinder GIS viewing tool, and the mapping process redesigned by the Pathfinder project. Data coding and attribution of the records enables search-ability and is critical to the success and adoption of these tools. General data attributes as well as specific Gas Service Record (GSR) scan attributes were gathered as part of the Pathfinder project, which deployed the GSR viewer in May 2015. During this process, it was discovered that additional data attributes were of value to gas operations, and the GSR scans were revisited to record these attributes. To minimize the risk of a similar issue occurring on the As-Built Records Consolidation project, the project was delayed until PG&E could stabilize the GSR viewing and searching process and apply lessons learned to the larger effort of digitizing the As-Built records. PG&E resumed the As-Built Records Consolidation project once the GSR viewer was stabilized in 2015, spending over \$1.5 million in expense in 2015. PG&E continues to work on the As-Built Records Consolidation project and expects to complete the project by the end of 2017.

- b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.
- c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_002-Q17		
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Request Date:	July 1, 2016	Requester DR No.:	002
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PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 17

Gas Distribution Expense – For the program Gas Distribution Leak Survey & Repair please provide the following:

- a) PG&E's response to ED-DR-1 states that this category is "not a program, represents costs incurred above balancing account cost caps," and reports amounts of \$28.409 million in 2014 and \$31.613 million in 2015. How was this spending funded?
- b) Were amounts reported as expense spending in this category recovered from ratepayers?
- c) How many leaks were found and repaired under this program in 2014 and 2015?
- d) Please provide actual mean and median unit costs for the repairs identified in c) above.

ANSWER 17

- a) In the 2014 GRC, the Commission established a balancing account for Gas Distribution Leak Survey and Repair. The Commission imposed a number of restrictions on the balancing account, including an overall limit on the amount of program costs that could be booked to the account. PG&E incurred significant additional costs for this work, as well as other work performed in 2014 and 2015, above what was authorized by the Commission. These expenditures above authorized were funded by shareholders.
- b) See response to subpart (a) above.
- c) The table below includes the number of gradable leaks found and the number of gradable leaks repaired for years 2014 and 2015.

	2014	2015
Number of Gradable Leaks Found	36,103	33,780
Number of Gradable Leaks Repaired	34,708	48,034

- d) The table below provides the actual mean and median unit costs for gradable above- and below-ground leaks repaired in years 2014 and 2015.

	2014	2015
Unit Cost Mean for Above- and Below-Ground Gradable Leaks Repaired	\$7,022	\$7,853
Unit Cost Median for Above- and Below-Ground Gradable Leaks Repaired	\$5,484	\$6,248

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Request Date:	July 12, 2016	Requester DR No.:	003
Date Sent:	July 26, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Maryam Ghadessi

QUESTION 1

Electric Generation Expense – For the program Maintenance Resv Dams & Waterways please provide the following:

- a) A narrative explanation as to the reason that 2014 expense was approximately \$12 million below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?
- d) When available, please provide expense spending for this program for Q1-Q2 of 2016.

ANSWER 1

- a) The 2014 expense spending in MWC AX was lower than the amount forecasted in the GRC primarily due to a major low-level outlet project at Kerckhoff Dam that was planned as an expense repair project but was completed as a capital replacement project, as well as miscellaneous repairs and dredging -projects that were reprioritized and rescheduled.
- b) As discussed in Chapter 4 of Exhibit (PG&E-2) in the 2017 GRC opening testimony, “Integrated Planning Process” (Attachment GRC-2017-PhI_DR_ED_002-Q01Atch04), since 2014, PG&E’s planning and budgeting process (Integrated Planning) has consisted of interconnected sessions in which PG&E annually:
 - 1) identifies its strategic areas of focus for the next 5 years (Executive Guidance);
 - 2) reviews and discusses the top risks for the Company and associated risk reduction and mitigation strategies (Session D);
 - 3) develops its 5-year line of business operating plan, goals and strategies, including risk management (S-1); and
 - 4) develops its 2-year detailed work plan, with targeted metric outcomes and financial prioritization of proposed work (S-2).

The Risk-Informed Budget Allocation (RIBA) process provides a framework for making risk-informed budget decisions and follows the Integrated Planning process. As noted on page 4-7 of attachment GRC-2017-PhI_DR_ED_002-Q01Atch04:

“Throughout the year, the LOBs may identify emerging issues or work items that were not in the original plans developed through the Integrated Planning process from the prior year. These emerging issues often require the reevaluation of the LOB work portfolios and may result in a reprioritization effort, either within the individual LOB or at the enterprise level, to ensure the emerging issues are addressed. The Company is generally provided discretion regarding the use of California Public Utilities Commission-approved funds and is expected to manage that funding in accordance with changing business and customer needs.”

- c) PG&E did not rely upon any specific Commission orders in prioritizing spending, but rather relied upon general Commission precedent concerning forecast ratemaking. In general, Commission decisions in rate cases do not establish budgets, but instead establish revenue requirements within which utilities have discretion to establish budgets. As the Commission explained in D.11-05-018 (page 27): “It is generally recognized that when a utility files a GRC, expenditure estimates are based on plans and preliminary budgets developed at least two years in advance of when they will actually be incurred. When the utility finalizes its budget just prior to the year when costs will be incurred or adjusts the budget during the year, new programs or projects may come up, others may be cancelled, and there may be reprioritization. This process is expected and is necessary for the utility to manage its operations in a safe and reliable manner.” Consistent with this precedent, PG&E establishes annual budgets using its Integrated Planning process, as described in Chapter 4 of Exhibit (PG&E-2) (attachment GRC-2017-PhI_DR_ED_002-Q01Atch04). PG&E described its 2014 and 2015 budgets and 2014 and 2015 spending in its annual Budget Compliance reports, as discussed in subpart “b” above.
- d) Expense spending in MWC AX for the first two quarters of 2016 was \$9.3 million. Note that the planned spend for MWC AX is not straight-lined and actual spending is typically higher in the second half of each year due to weather and other operational constraints. Also, please note that effective January 1, 2016, PG&E’s budget and recorded costs reflect a new cost model which shifts costs among MWCs and organizations to improve accountability and visibility by assigning costs to the service providers where costs can be better monitored (e.g. Shared Services and Information Technology). Therefore, the 2016 costs may not be directly comparable to prior year’s costs.

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Request Date:	July 12, 2016	Requester DR No.:	003
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PG&E Witness:	Various	Requester:	Maryam Ghadessi

QUESTION 2

Electric Generation Expense – For the program Operate DCCP Plant please provide the following:

- a) A narrative explanation as to the reason that 2014 was approximately \$7 million above authorized levels.
- b) Were the additional funds allocated for this program reprioritized? If so where were the funds moved from?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?
- d) When available, please provide expense spending for this program for Q1-Q2 of 2016.

ANSWER 2

- a) The 2014 GRC decision made certain adjustments to PG&E's forecast of \$107.3 million in MWC BR. The adjustments were primarily the removal of the incremental cost associated with hiring ahead of attrition for Diablo Canyon. The adjustments were removed 100% from MWC BR. If instead only the \$3.0 million of the adjustments directly applicable to MWC BR had been removed from MWC BR, the actual MWC BR expense costs of \$104.7 would have been very close to the authorized amount for this MWC.
- b) See response to Question 1 subpart b of this data request.
- c) See response to Question 1 subpart c of this data request.
- d) Expense spending in MWC BR for the first two quarters of 2016 was \$37.9 million. Please note that effective January 1, 2016, PG&E's budget and recorded costs reflect a new cost model which shifts costs among MWCs and organizations to improve accountability and visibility by assigning costs to the service providers where costs can be better monitored (e.g. Shared Services and Information Technology). Therefore, the 2016 costs may not be directly comparable to prior year's costs.

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PG&E Data Request No.:	ED_003-Q03		
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Request Date:	July 12, 2016	Requester DR No.:	003
Date Sent:	July 26, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Maryam Ghadessi

QUESTION 3

Electric Generation Expense – For the program Manage Var Bal Acct Processes please provide the following:

- e) A narrative explanation as to the reason that 2014 was approximately \$9 million above authorized levels.
- f) Were the additional funds allocated for this program reprioritized? If so where were the funds moved from?
- g) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?
- h) When available, please provide expense spending for this program for Q1-Q2 of 2016.

ANSWER 3

- e) The 2014 GRC imputed regulatory value for MWC BS was \$182.9 million, which included \$14.6 million for various expense balancing account orders. Subsequent to the issuance of the GRC decision, PG&E created a new MWC IG specifically for the expense balancing account orders. The actual costs for MWC IG totaled \$8.6 million (compared to an authorized amount of \$0 for MWC IG because MWC IG was created after the GRC Decision). When compared to the \$14.6 million authorized for this work (included in MWC BS), the principal reason for underspending was due to a lack of clarity on the final Fukushima expense scope at the time of the 2014 GRC filing. Fukushima costs were forecasted in the GRC at \$11.5 million, but actual costs were only \$1.8 million. This underspend was partially offset by both Emergency Planning and Cybersecurity which were \$2 million higher than the 2014 GRC forecast.
- f) See response to Question 1 subpart b of this data request. Because the costs in MWC IG are included in a 2-way balancing account, the net underspending in these programs cannot be reallocated to other programs. Instead the underspending is returned to customers through the balancing account. Likewise if costs are higher than forecasted, they are collected through the balancing account and do not require reallocations to fund any shortfalls.
- g) See response to Question 1 subpart c of this data request.

- h) Expense spending in MWC IG for the first two quarters of 2016 was \$12.9 million. Please note that effective January 1, 2016, PG&E's budget and recorded costs reflect a new cost model which shifts costs among MWCs and organizations to improve accountability and visibility by assigning costs to the service providers where costs can be better monitored (e.g. Shared Services and Information Technology). Therefore, the 2016 costs may not be directly comparable to prior year's costs.

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Date Sent:	July 26, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Maryam Ghadessi

QUESTION 4

Electric Generation Expense – For the program Maintain DCCP Plant Assets please provide the following:

- a) A narrative explanation as to the reason that 2014 expense was approximately \$18 million below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?
- d) When available, please provide expense spending for this program for Q1-Q2 of 2016.

ANSWER 4

- a) The 2014 GRC imputed regulatory value for MWC BS was \$182.9 million, which included \$14.6 million for various expense balancing account orders. Subsequent to the issuance of the GRC decision, PG&E created a new MWC IG specifically for the expense balancing account orders, and the costs associated with the balancing account orders were moved to MWC IG. This reclassification restates MWC BS to an authorized amount of \$168.3 million. This results in a much smaller underspending of \$2.9 million for 2014 in MWC BS, or 1.7%. See also PG&E's response to Question 3.
- b) See response to Question 1 subpart b of this data request.
- c) See response to Question 1 subpart c of this data request.
- d) Expense spending in MWC BS for the first two quarters of 2016 was \$72.5 million. Please note that effective January 1, 2016, PG&E's budget and recorded costs reflect a new cost model which shifts costs among MWCs and organizations to improve accountability and visibility by assigning costs to the service providers where costs can be better monitored (e.g. Shared Services and Information Technology). Therefore, the 2016 costs may not be directly comparable to prior year's costs.

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PG&E Data Request No.:	ED_003-Q05		
PG&E File Name:	GRC-2017-PhI_DR_ED_003-Q05		
Request Date:	July 12, 2016	Requester DR No.:	003
Date Sent:	July 26, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Maryam Ghadessi

QUESTION 5

Electric Generation Expense – For the program Maintenance Fossil Generating Equip please provide the following:

- a) A narrative explanation as to the reason that 2014 expense was approximately \$11 million below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?
- d) When available, please provide expense spending for this program for Q1-Q2 of 2016.

ANSWER 5

- a) The primary reason that the 2014 recorded expense was below the GRC authorized level for MWC KL was due to the GRC authorized amount reflecting the levelization of Fossil Long Term Service Agreements (LTSA) per the GRC Decision. LTSA costs are “lumpy” and generally incurred when there are major outages at the fossil plants, and there were no major Fossil LTSA outages occurring in 2014.
- b) See response to Question 1 subpart b of this data request.
- c) See response to Question 1 subpart c of this data request.
- d) Expense spending in MWC KL for the first two quarters of 2016 was \$38.4 million. Note that there was a major Fossil LTSA outage at Gateway Generating Station in the first half of 2016. Also, please note that effective January 1, 2016, PG&E’s budget and recorded costs reflect a new cost model which shifts costs among MWCs and organizations to improve accountability and visibility by assigning costs to the service providers where costs can be better monitored (e.g. Shared Services and Information Technology). Therefore, the 2016 costs may not be directly comparable to prior year’s costs.

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PG&E Data Request No.:	ED_004-Q05		
PG&E File Name:	GRC-2017-PhI_DR_ED_004-Q05		
Request Date:	August 1, 2016	Requester DR No.:	004
Date Sent:	August 11, 2016	Requesting Party:	Energy Division
PG&E Witness:	Helen Vu	Requester:	Jean Spencer

QUESTION 5

Other – For the program Maintain Buildings please provide the following:

- a) A narrative explanation as to the reason that 2014 and 2015 expenses were approximately \$12.64 and \$14.66 million respectively below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so, where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 5

- a) Note: The only safety work included in MWC BI is seismic safety work, other BI spend is for base building work (roofing, paving, etc.) and ADA compliance projects. For seismic safety, two of the three buildings were completed as planned. The third location was deferred due to potential closure of the building.

Due to the integrated planning process (see below), MWC BI did not receive full authorized funding as part of the company budget process. As shown in the March 30, 2015 budget in compliance report, MWC BI was only budgeted \$10.8M in 2014. As shown in the March 31, 2016 Budget in Compliance report, MWC BI was only budgeted \$6.7M in 2015. Therefore, 2014 actual spend was in line with internally budgeted amounts. For 2015, the increase in spend over budgeted amounts was due to higher than anticipated costs with base building work, which used reallocated funds from MWC JH.

- b) For 2015, the overspend dollars over the budgeted amount of \$6.7M was due to higher than anticipated costs with base building work, which used reallocated funds from MWC JH.

As discussed in Chapter 4 of Exhibit (PG&E-2) in the 2017 GRC opening testimony, “Integrated Planning Process” (Attachment GRC-2017-PhI_DR_ED_002-Q01Atch04), since 2014, PG&E’s planning and budgeting process (Integrated Planning) has consisted of interconnected sessions in which PG&E annually:

- 1) identifies its strategic areas of focus for the next 5 years (Executive Guidance);

(PG&E-44)

- 2) reviews and discusses the top risks for the Company and associated risk reduction and mitigation strategies (Session D);
- 3) develops its 5-year line of business operating plan, goals and strategies, including risk management (S-1); and
- 4) develops its 2-year detailed work plan, with targeted metric outcomes and financial prioritization of proposed work (S-2).

c) N/A

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PG&E Data Request No.:	ED_004-Q06		
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Request Date:	August 1, 2016	Requester DR No.:	004
Date Sent:	August 18, 2016	Requesting Party:	Energy Division
PG&E Witness:	Andrew K. Williams	Requester:	Jean Spencer

QUESTION 6

Other – For the program Safety Engineering and OSHA Compliance please provide the following:

- a) A narrative explanation as to the reason that 2014 and 2015 expenses were approximately \$2.84 and \$8.73 million respectively above authorized levels.
- b) Were the additional funds allocated for this program reprioritized from elsewhere? If so, where were the funds moved from?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 6

- a) Through the Company's Integrated Planning process (see Exhibit (PG&E-2), Chapter 4 from PG&E's 2017 GRC) for a discussion of the Integrated Planning process), MWC FL received more funding than the authorized amount to support work for the implementation of the Safety Culture program and the contractor safety program.
- b) The additional budgeted amount was primarily funded from the Company's reserve fund. As discussed in Chapter 4 of Exhibit (PG&E-2), the reserve fund is not derived from any specific sources. In other words, the reserve fund is not derived from a re-allocation from any particular types of work to the reserve fund. Rather, PG&E develops a general reserve level at the beginning of the Integrated Planning process that is generally informed by historical levels of funding allocated from the reserve for emergent items.
- c) In 2014, the Kern Oil settlement agreement was reached whereby PG&E agreed to implement a company-wide contractor safety program. This settlement was adopted in Decision 15-07-014. Since then, PG&E established a contractor safety group. Additional staff was hired in 2015-2016 to support the contractor safety program. Note that PG&E shareholders have contributed \$1 million to offset costs associated with the contractor safety program. The ratemaking adjustment is made in the Kern Power Plant decommissioning costs and described in the 2017 GRC Exhibit (PG&E-10), Chapter 10.

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PG&E Data Request No.:	ED_004-Q08		
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Request Date:	August 1, 2016	Requester DR No.:	004
Date Sent:	August 12, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Jean Spencer

QUESTION 8

Other – For the program IT Project Costs please provide the following:

- a) A narrative explanation as to the reason that 2014 and 2015 expenses were approximately \$7.61 and \$7.48 million respectively below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so, where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 8

- a) The following explanations provided for both years encompass costs that are not entirely related to safety and risk because both the authorized and actual spend amounts were not segregated for safety and risk only.

The 2014 expense spending in IT Project Costs was lower than the GRC authorized amount primarily due to resequencing new improvement projects within the Risk organization in order to develop a physical security strategy first; completing annual Human Resource projects efficiently; and reprioritizing and resequencing various minor enhancement projects for Finance and Regulatory systems.

The 2015 expense spending in IT Project Costs was lower than the GRC authorized amount primarily due to the efficient implementation of the Cost Model redesign project in Finance; resequencing new improvement projects within the Risk organization in order to develop a physical security strategy first; and executing Regulatory Rate Model projects as capital instead of expense as originally planned.

- b) PG&E described its Integrated Planning Process in Chapter 4 of Exhibit (PG&E-2) in the 2017 GRC opening testimony, “Integrated Planning Process” (Attachment GRC-2017-PhI_DR_ED_002-Q01Atch04). Since 2014, PG&E’s planning and budgeting process (Integrated Planning) has consisted of interconnected sessions in which PG&E annually:
 - 1) identifies its strategic areas of focus for the next 5 years (Executive Guidance);

- 2) reviews and discusses the top risks for the Company and associated risk reduction and mitigation strategies (Session D);
- 3) develops its 5-year line of business operating plan, goals and strategies, including risk management (S-1); and
- 4) develops its 2-year detailed work plan, with targeted metric outcomes and financial prioritization of proposed work (S-2).

While PG&E has spent less in certain programs, the Company as a whole is forecast to spend well above its expense and capital adopted levels in the 2014 GRC cycle. As shown in Table 1-3 of Exhibit (PG&E-1), Chapter 1, PG&E is forecast to spend \$100 million above its adopted level for expense and \$554 million above its adopted level in capital expenditures between 2014 through 2016.

- c) PG&E did not rely on any specific Commission orders in prioritizing spending, but rather relied upon general Commission precedent concerning forecast ratemaking. In general, Commission decisions in rate cases do not establish budgets, but instead establish revenue requirements within which utilities have discretion to establish budgets. As the Commission explained in D.11-05-018 (page 27): "It is generally recognized that when a utility files a GRC, expenditure estimates are based on plans and preliminary budgets developed at least two years in advance of when they will actually be incurred. When the utility finalizes its budget just prior to the year when costs will be incurred or adjusts the budget during the year, new programs or projects may come up, others may be cancelled, and there may be reprioritization. This process is expected and is necessary for the utility to manage its operations in a safe and reliable manner." Consistent with this precedent, PG&E establishes annual budgets using its Integrated Planning process, as described in Chapter 4 of Exhibit (PG&E-2) (attachment GRC-2017-Phi_DR_ED_002-Q01Atch04). PG&E described its 2014 and 2015 budgets and 2014 and 2015 spending in its annual Budget Compliance reports, as discussed in subpart "b" above.

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PG&E Data Request No.:	ED_002-Q05		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q05		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 5

Electric Distribution Capital – For the program Replace Substation Equipment please provide the following:

- a) A narrative explanation as to the reason that 2014 cap ex was approximately \$24.470 million and 2015 cap ex was approximately \$8.770 million below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 5

- a) PG&E notes that the capital expenditures for the Replace Substation Equipment program (MWC 48) were \$33.5 million less than the authorized amount in 2014 and \$7.5 million less than authorized in 2015.

The difference in recorded capital expenditures from authorized in 2014 was primarily due to funds re-allocated to support substation emergency replacements and higher priority work in other programs (see response to subpart “b” below). Additionally, three non-critical switchgear replacement projects were rescheduled to 2015. The difference in actual capital expenditures from authorized in 2015 was due to lower than planned expenditures on several switchgear projects and a lower volume of circuit breaker projects undertaken.

- b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.
- c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_002-Q06		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q06		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 6

Electric Distribution Capital – For the program Distribution Transformer Replacements please provide the following:

- a) A narrative explanation as to the reason that 2014 cap ex was approximately \$33.596 million and 2015 cap ex was approximately \$9.118 million below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 6

- a) PG&E spent less than authorized for Distribution Transformer Replacements (MWC 54) in 2014 due to more current assessments of project information, including construction schedule changes to coordinate projects with the other work at the stations, and funds reallocated to support substation emergency replacements and higher priority work in other programs (see response to subpart “b”).

The 2015 capital expenditures were less than authorized primarily due to a lower volume of circuit breaker projects undertaken, and the reprioritization of the Berkeley T Substation Bank 1 and Bank 2 replacement project.

- b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.
- c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_002-Q07		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q07		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 7

Electric Distribution Capital – For the program Base Reliability and Conductor Replacements - Mitigate Recurring Outages please provide the following:

- a) A narrative explanation as to the reason that 2014 cap ex was approximately \$18.921 million and 2015 cap ex was approximately \$23.513 million below authorized level.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 7

- a) PG&E changed the cost accounting of some work in MWC 08 after filing the 2014 GRC. Two subprograms in MWC 08, Line Recloser Revolving Stock and Base Reliability Program, were moved to MWC 49. These reclassifications are not reflected in the authorized 2014 and 2015 amounts for MWC 08, and are the primary reason for the actual amounts being below the authorized amounts for both 2014 and 2015.

Additionally, in 2014, crews were diverted to storm response in December, resulting in a lower volume of work, and some projects were rescheduled to 2015. For 2015, PG&E spent less than forecast on overhead conductor replacements due to reprioritization of funds to support new business and storm response. Some reliability projects were rescheduled to 2016.

- b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.
- c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_002-Q09		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q09		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 9

Electric Distribution Capital – For the program Technology please provide the following:

- a) A narrative explanation as to the reason that 2015 cap ex was approximately \$15.086 million below authorized level.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 9

- a) The drivers for the 2015 Electric Distribution technology capital expenditures (MWC 2F) below authorized level are as follows: completing the Electric Distribution Asset Management Geographic Information System (ED/AM-GIS) project ahead of schedule and under budget; reclassifications of capital costs to expense for the Estimator Work Management and SAP Work Management projects due to a change in project delivery; and the strategic rescheduling of several key workforce mobilization projects in an effort to leverage foundational capabilities that will be delivered in the Enterprise Mobile Platform solution originally planned for 2015 but rescheduled to 2016 and beyond.
- b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.
- c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_002-Q10		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q10		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 10

Electric Distribution Capital – For the program Tools & Equipment please provide the following:

- a) A narrative explanation as to the reason that 2014 and 2015 cap ex were approximately \$47.351 and \$39.698 million respectively above authorized.
- b) PG&E states that the “The 2014 GRC forecast and authorized values for MWC 05 included efficiency credits, resulting in an overall negative number.” Please provide a breakdown of forecast, actual, and authorized amounts into efficiency credits and other spending.
- c) Were the additional funds allocated to this program reprioritized from elsewhere? If so where were the funds moved from?
- d) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 10

- a) 2014 and 2015 capital expenditures were \$47.351 million and \$39.698 million, respectively, above authorized primarily due to the efficiencies planned (as credits) in MWC 05 being realized in other MWCs. See the response to subpart b) below indicating the planned efficiencies in MWC 05 that were actually recorded in other MWCs.
- b) The table below provides a breakdown of the 2014 and 2015 forecast, actual and adopted amounts into efficiency credits and other spending in MWC 05. Note that the authorized amounts are only available at the MWC level. Additionally, as noted above, efficiency savings are forecast centrally in MWC 05, but are realized in multiple MWCs. See 2017 GRC Exhibit (PG&E-4), pages WP 19-24 and WP 19-31 for detail on where the actual 2014 efficiencies were realized.

(Thousands of dollars)	2014 Forecast	2014 Actual	2014 Adopted	2015 Forecast	2015 Actual	2015 Adopted
Tools and Equipment	\$ 2,085	\$ 4,509		\$ 2,085	\$ 4,268	
Material Overdraw	\$ (5,000)	\$ 211		\$ (5,000)	\$ -	
Escalation	\$ (57)	\$ -		\$ (52)	\$ -	
Applied Technology Services (ATS) Tools	\$ 645	\$ 1,990		\$ 645	\$ 349	
Efficiency Savings	\$(43,656)	\$ -		\$(42,597)	\$ -	
Total	\$(45,982)	\$6,709	\$ (40,641)	\$(44,920)	\$ 4,617	\$(35,081)

c) See response in attachment GRC-2017-Phi_DR_ED_002-Q01Atch03.

d) See response in attachment GRC-2017-Phi_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_002-Q11		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q11		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 11

Electric Distribution Capital – For the program Pole Replacements please provide the following:

- a) A narrative explanation as to the reason that 2014 cap ex was approximately \$42.582 million and 2015 cap ex was approximately \$43.308 million above authorized levels.
- b) Were the additional funds allocated to this program reprioritized from elsewhere? If so where were the funds moved from?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 11

- a) PG&E spent more than authorized on pole replacements in 2014 and 2015 due to a higher volume of pole replacements than forecast and higher unit cost for higher complexity jobs. Additionally, the 2014 GRC forecast completing all center bore streetlights pole replacements by the end of 2013, and this work is still in progress. The table below shows the forecast vs. actual number of pole replacements in 2014 and 2015.

	2014 Forecast	2014 Actual	2015 Forecast	2015 Actual
Pole Replacements	6,055	9,039	5,917	8,583
Center-bore Streetlights	0	438	0	914
Total	6,055	9,477	5,917	9,497

- b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.
- c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_002-Q13		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q13		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 13

Electric Distribution Capital – For the program Major Emergency please provide the following:

- a) A narrative explanation as to the reason that 2015 cap ex was approximately \$86.355 million above authorized levels.
- b) Were the additional funds allocated to this program reprioritized from elsewhere? If so where were the funds moved from?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 13

- a) The 2015 capital expenditures for the Major Emergency Program (MWC 95) were approximately \$86.355 million above authorized levels due to severe weather events and wildfires that occurred in 2015.

The 2015 recorded amount of \$128.7 million includes costs that are eligible for recovery through the Catastrophic Events Memorandum Account (CEMA). The total amounts of these eligible costs are being finalized and will be included in a future CEMA application.

- b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.
- c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_002-Q14		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q14		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 14

Electric Distribution Capital – For the program Emergency Response please provide the following:

- a) A narrative explanation as to the reason that 2014 cap ex was approximately \$16.807 million and 2015 cap ex was approximately \$43.155 million above authorized levels.
- b) Were the additional funds allocated to this program reprioritized from elsewhere? If so where were the funds moved from?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 14

- a) Routine emergency work is driven by many unpredictable factors such as weather events that do not meet major emergency criteria, third party-damage to PG&E facilities, and any unplanned outage activity.

2014 Routine Emergency Response Program (MWC 17) costs were higher than authorized due to higher costs for facility replacement work in response to outages. This cost increase is driven by an increase in volume as well as a higher than planned unit cost. The increase in unit cost is attributed to the following factors:

1. Slight increase in material related costs, and
2. Higher than planned hours per unit due to the complexity of the outages that took place in 2014.

2015 costs were higher than authorized mainly due to higher than planned unit costs which are attributed to the following factors:

1. Higher contract costs,
2. Slight increase in material related costs,
3. Increase in overhead allocation costs, and
4. Higher than planned hours per unit due to the complexity of the outages that took place in 2015.

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b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_002-Q18		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q18		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 18

Gas Distribution Capital – For the program Gas Distribution Pipeline Replacement Program please provide the following:

- a) A narrative explanation as to the reason that 2014 and 2015 cap ex were approximately \$115.748 and \$26.752 million respectively below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 18

- a) The 2014 capital expense for Gas Distribution Main Replacement Programs (MWC 14) was below 2014 GRC authorized levels due to the timing of and uncertainty associated with the final 2014 GRC decision. PG&E established its 2014 spending at a level consistent with its 2013 spending profile. Other drivers included the implementation of a service replacement policy, resulting in a \$100 million reduction of program costs for main replacement compared to the 2014 GRC forecast. For additional details, see PG&E's Gas Distribution Pipeline Safety Report, No. 2014-02, Reporting Period July 1 – December 31, 2014, in Compliance with CPUC D. 11-05-018, pages 9-10, 12 and 69. This report was sent to Mr. Edward Randolph, Director of the Energy Division, on March 30, 2015.

In 2015, PG&E spent \$27 million less than the Decision Allocation for MWC 14. The allocation of the 2015 funding reflects a lower prioritization for the pipeline replacement program within the Gas Operations portfolio. The primary driver for the reduction in MWC 14 was to support the increased expenditures for service replacements (MWC 50). For additional details, see PG&E's Gas Distribution Pipeline Safety Report, No. 2015-02, Reporting Period July 1 – December 31, 2015, in Compliance with CPUC D. 11-05-018, page 58. This report was sent to Mr. Edward Randolph, Director of the Energy Division, on March 30, 2016.

- b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.
- c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_002-Q20		
PG&E File Name:	GRC-2017-PhI_DR_ED_002-Q20		
Request Date:	July 1, 2016	Requester DR No.:	002
Date Sent:	July 19, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Matthew Karle

QUESTION 20

Gas Distribution Capital – For the program Gas Distribution Control Operations Assets please provide the following:

- a) A narrative explanation as to the reason that actual 2014 and 2015 cap ex were approximately \$27.613 and \$19.220 million respectively below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 20

- a) The reasons that actual 2014 and 2015 capital expenditures for the program Gas Distribution Control Operations Assets (MWC 4A) were below authorized levels are discussed in detail in PG&E's Opening Testimony in Exhibit (PG&E-3), Chapter 7, pages 7-19 through 7-21. In sum, early in the installation process PG&E saw that the unit costs were unacceptably high, and halted the work to analyze the causes. Consequently, PG&E improved the process to drive the unit cost downward. PG&E also determined that the number of units initially planned for deployment could be reduced without significantly altering the safety benefits of the original deployment plan.
- b) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.
- c) See response in attachment GRC-2017-PhI_DR_ED_002-Q01Atch03.

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PG&E Data Request No.:	ED_003-Q07		
PG&E File Name:	GRC-2017-PhI_DR_ED_003-Q07		
Request Date:	July 12, 2016	Requester DR No.:	003
Date Sent:	July 26, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Maryam Ghadessi

QUESTION 7

Electric Generation Capital – For the program Instl/Rpl for Hydro Safety & Reg please provide the following:

- a) A narrative explanation as to the reason that 2014 cap ex was approximately \$8 million and 2015 cap ex was approximately 8 million below authorized levels.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?
- d) When available, please provide cap ex for this program for Q1-Q2 of 2016.

ANSWER 7

- a) The primary reasons that the 2014 recorded capital expenditure was below the GRC authorized level for MWC 2L was due to reduced contractor costs achieved by restaging work on several projects, lower priority projects cancelled, and other project work rescheduled from 2014 due to changes in planned outage schedules.

The 2015 authorized capital amounts by MWC are not tied to specific projects, but rather are based on a 7-year average of historical expenditures for each MWC. While a comparison of 2015 actuals to 2015 authorized is not possible due to the difference in methodology, the lower than authorized spending in MWC 2L was primarily due to delays in permitting on various projects pushing work to 2016 and higher realized capital efficiencies.

Power Generation manages its capital budget at the line-of-business level, not at the MWC level. Work is prioritized at the individual project level and the resulting mix by MWC can vary year by year.

- b) See response to Question 1 subpart b of this data request.
- c) See response to Question 1 subpart c of this data request.
- d) The recorded capital expenditures for Q1-Q2 of 2016 for MWC 2L is \$12.2 million. Please note that effective January 1, 2016, PG&E's budget and recorded costs reflect a new cost model which shifts costs among MWCs and organizations to

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improve accountability and visibility by assigning costs to the service providers where costs can be better monitored (e.g. Shared Services and Information Technology). Therefore, the 2016 costs may not be directly comparable to prior year's costs.

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Request Date:	July 12, 2016	Requester DR No.:	003
Date Sent:	July 26, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Maryam Ghadessi

QUESTION 9

Electric Generation Capital – For the program Instl/Rpl Resv, Dams & Waterway please provide the following:

- a) A narrative explanation as to the reason that 2014 cap ex was approximately \$30 million and 2015 cap ex was approximately \$16 million below authorized level.
- b) Were the funds allocated for this program reprioritized? If so where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?
- d) When available, please provide cap ex for this program for Q1-Q2 of 2016.

ANSWER 9

- a) The primary reasons that the 2014 recorded capital expenditure was below the GRC authorized level for MWC 2N was due to rescheduling of work at the Potter Valley penstock due to materials availability, cancellation of the Centerville penstock replacement, reduced costs of canal repairs due to asset management efficiency programs such as implementing new standardized designs, bundling contracts, and prioritizing the portfolio of water conveyance projects.

As described in the response to Question 7 subpart a of this data request. The “authorized” amounts for each major work category are not tied to specific projects. A comparison of 2015 actuals to 2015 authorized is not possible due to the difference in methodology and there was a very large dam project included in the historical data, affecting the historical average.

- b) See response to Question 1 subpart b of this data request.
- c) See response to Question 1 subpart c of this data request.
- d) The recorded capital expenditures for Q1-Q2 of 2016 for MWC 2N is \$23.5 million. Please note that effective January 1, 2016, PG&E’s budget and recorded costs reflect a new cost model which shifts costs among MWCs and organizations to improve accountability and visibility by assigning costs to the service providers where costs can be better monitored (e.g. Shared Services and Information

(PG&E-44)

Technology). Therefore, the 2016 costs may not be directly comparable to prior year's costs.

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Request Date:	July 12, 2016	Requester DR No.:	003
Date Sent:	July 26, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Maryam Ghadessi

QUESTION 11

Electric Generation Distribution Capital – For the program Instl/Rplc Fossil Generating Equipment please provide the following:

- a) A narrative explanation as to the reason that 2014 and 2015 cap ex were approximately \$8 million and \$5 million respectively above authorized.
- b) Were the additional funds allocated to this program reprioritized from elsewhere? If so where were the funds moved from?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?
- d) When available, please provide cap ex for this program for Q1-Q2 of 2016.

ANSWER 11

- a) The primary reason that the 2014 recorded capital expenditure was above the GRC authorized level for MWC 2S was due to an emergent project for major work on the Colusa Generating Station steam turbine generator.

As described in the response to Question 7 subpart a of this data request, the “authorized” amounts for each major work category are not tied to specific projects, so a 2015 comparison is not possible. Because the historical spending amounts are so low for fossil, the 2015 authorized amounts for fossil MWCs are very low, but specific projects were needed for fossil including the purchase of a spare transformer for Humboldt Bay Generating Station and emergent work for a transformer bushing replacement and air cooled condenser fan blade replacement at Colusa Generating Station.

- b) See response to Question 1 subpart b of this data request.
- c) See response to Question 1 subpart c of this data request.
- d) The recorded capital expenditures for Q1-Q2 of 2016 for MWC 2S is \$6.5 million. Please note that effective January 1, 2016, PG&E’s budget and recorded costs reflect a new cost model which shifts costs among MWCs and organizations to improve accountability and visibility by assigning costs to the service providers where costs can be better monitored (e.g. Shared Services and Information

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Technology). Therefore, the 2016 costs may not be directly comparable to prior year's costs.

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Request Date:	July 12, 2016	Requester DR No.:	003
Date Sent:	July 26, 2016	Requesting Party:	Energy Division
PG&E Witness:	Various	Requester:	Maryam Ghadessi

QUESTION 13

Electric Distribution Capital – For the program Nuclear Safety and Security please provide the following:

- a) A narrative explanation as to the reason that 2014 cap ex was approximately 44 million and 2015 cap ex was approximately 43 million above authorized levels.
- b) Were the funds allocated for this program reprioritized? If so where were the funds moved from ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?
- d) When available, please provide expense for this program for Q1-Q2 of 2016.

ANSWER 13

- a) The 2014 GRC imputed regulatory value for MWC 20 for 2014 was \$237.5 million and included \$58.9 million for various capital balancing account orders. Subsequent to the issuance of the GRC decision, PG&E created a new MWC 3I specifically for the capital balancing account orders. The actual costs for this new MWC 3I totaled \$44.1 million. The principal reason for underspending the new MWC 3I authorized amount by \$14.8 million was due to delays in implementing the Reactor Cooling Pumps (RCP) Thermal Seal projects and the Fire Detection modifications – both NFPA 805 modifications. Both of these projects require a refueling outage window for implementation and they were delayed by one refueling cycle (or about eighteen months) due to issues related to vendor acceptance testing and design complexity.

Similarly, the GRC imputed regulatory value for MWC 20 for 2015 was \$205.0 million and included \$60.9 million for various capital balancing account orders being tracked in MWC 3I. The actual costs for this new MWC 3I totaled \$43.3 million in 2015. The principal reason for underspending the new MWC 3I authorized amount by \$17.6 million was due to delays in implementing the Fire Detection and Hot Shut Down modifications (both NFPA 805 modifications) and an over estimate of the needs for the Fukushima capital program in 2015. Both of the NFPA 805 projects were delayed by one refueling cycle, or about eighteen months due to design complexity and resource availability issues.

- b) See response to Question 1 subpart b of this data request.
- c) See response to Question 1 subpart c of this data request.
- d) The recorded capital expenditures for Q1-Q2 of 2016 for MWC 3I is \$21.1 million. Please note that effective January 1, 2016, PG&E's budget and recorded costs reflect a new cost model which shifts costs among MWCs and organizations to improve accountability and visibility by assigning costs to the service providers where costs can be better monitored (e.g. Shared Services and Information Technology). Therefore, the 2016 costs may not be directly comparable to prior year's costs.

PACIFIC GAS AND ELECTRIC COMPANY
2017 General Rate Case Phase I
Application 15-09-001
Data Response

PG&E Data Request No.:	ED_004-Q09		
PG&E File Name:	GRC-2017-PhI_DR_ED_004-Q09		
Request Date:	August 1, 2016	Requester DR No.:	004
Date Sent:	August 11, 2016	Requesting Party:	Energy Division
PG&E Witness:	Helen Vu	Requester:	Jean Spencer

QUESTION 9

Other – For the program Maintain Buildings please provide the following:

- a) A narrative explanation as to the reason that 2014 cap ex was approximately \$1.91 million and 2015 cap ex was approximately \$6.23 million above authorized levels.
- b) Were the additional funds allocated for this program reprioritized from elsewhere? If so, where were the funds moved from?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 9

- a) Note: The only safety work included in MWC 22 is seismic safety work; other MWC 22 spend is for base building work (roofing, paving, etc.). Although capital dollars were forecasted for seismic safety, the majority of actual spend was expense. Overall, two of the three buildings forecasted for seismic safety were completed as planned. The third location was deferred due to potential closure of the building.
Due to the integrated planning process (see below), MWC 22 received more than its authorized amounts as part of the company budget process. As shown in the March 30, 2015 budget in compliance report, MWC 22 was budgeted \$56.2M in 2014. As shown in the March 31, 2016 Budget in Compliance report, MWC 22 was budgeted \$43.2M in 2015. Therefore, 2015 actual spend was in line with internally budgeted amounts. For 2014, underspent funds were reprioritized to MWC 04 for vehicle purchases.
- b) For 2014, the underspent dollars of the budgeted amount of \$56.2M was reprioritized to MWC 04, for additional vehicle purchases.

As discussed in Chapter 4 of Exhibit (PG&E-2) in the 2017 GRC opening testimony, “Integrated Planning Process” (Attachment GRC-2017-PhI_DR_ED_002-Q01Atch04), since 2014, PG&E’s planning and budgeting process (Integrated Planning) has consisted of interconnected sessions in which PG&E annually:

(PG&E-44)

- 1) identifies its strategic areas of focus for the next 5 years (Executive Guidance);
- 2) reviews and discusses the top risks for the Company and associated risk reduction and mitigation strategies (Session D);
- 3) develops its 5-year line of business operating plan, goals and strategies, including risk management (S-1); and
- 4) develops its 2-year detailed work plan, with targeted metric outcomes and financial prioritization of proposed work (S-2).

c) N/A

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PG&E Data Request No.:	ED_004-Q10		
PG&E File Name:	GRC-2017-PhI_DR_ED_004-Q10		
Request Date:	August 1, 2016	Requester DR No.:	004
Date Sent:	August 11, 2016	Requesting Party:	Energy Division
PG&E Witness:	John Nichols	Requester:	Jean Spencer

QUESTION 10

Other – For the program Build IT Apps and Infrastructure please provide the following:

- a) A narrative explanation as to the reason that 2014 cap ex was approximately \$36.14 million below authorized level and 2015 cap ex was approximately \$11.56 million above authorized level.
- b) Were the funds allocated for this program reprioritized? If so, where were the funds ultimately spent?
- c) Did PG&E rely on any specific Commission orders in reprioritizing this program spending?

ANSWER 10

- a) The 2014 capital spending in Build IT Apps and Infrastructure was lower than the GRC authorized amount primarily due to rescheduling of the Telecomm Network Enhancement Project to address vendor constraints, and various lifecycle projects that were reprioritized and rescheduled.

The 2015 capital spending in Build IT Apps and Infrastructure was higher than the GRC authorized amount primarily due to additional expenditures on the Disaster Recovery projects within the Datacenter Technologies solutions, and unplanned implementation costs on key enterprise project management solutions.
- b) As discussed in Chapter 4 of Exhibit (PG&E-2) in the 2017 GRC opening testimony, “Integrated Planning Process” (Attachment GRC-2017-PhI_DR_ED_002-Q01Atch04), since 2014, PG&E’s planning and budgeting process (Integrated Planning) has consisted of interconnected sessions in which PG&E annually:
 - 1) identifies its strategic areas of focus for the next 5 years (Executive Guidance);
 - 2) reviews and discusses the top risks for the Company and associated risk reduction and mitigation strategies (Session D);
 - 3) develops its 5-year line of business operating plan, goals and strategies, including risk management (S-1); and

- 4) develops its 2-year detailed work plan, with targeted metric outcomes and financial prioritization of proposed work (S-2).
- c) PG&E did not rely on any specific Commission orders in prioritizing spending, but rather relied upon general Commission precedent concerning forecast ratemaking. In general, Commission decisions in rate cases do not establish budgets, but instead establish revenue requirements within which utilities have discretion to establish budgets. As the Commission explained in D.11-05-018 (page 27): "It is generally recognized that when a utility files a GRC, expenditure estimates are based on plans and preliminary budgets developed at least two years in advance of when they will actually be incurred. When the utility finalizes its budget just prior to the year when costs will be incurred or adjusts the budget during the year, new programs or projects may come up, others may be cancelled, and there may be reprioritization. This process is expected and is necessary for the utility to manage its operations in a safe and reliable manner." Consistent with this precedent, PG&E establishes annual budgets using its Integrated Planning process, as described in Chapter 4 of Exhibit (PG&E-2) (attachment GRC-2017-Phi_DR_ED_002-Q01Atch04). PG&E described its 2014 and 2015 budgets and 2014 and 2015 spending in its annual Budget Compliance reports, as discussed in subpart "b" above.